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**Graduate Training in Internal Medicine in a
Municipal Hospital***

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Since the symposium on graduate medical instruction in 1934 at the Nashville meeting, very little has transpired that is strictly new; but in that short period a demand for opportunity to specialize in internal medicine has greatly increased and the American Board has gone about qualifying the man who has been trained.

This discourse might well be called a preliminary report because it has no conclusions but merely states the problem and describes work in progress. The report is reluctantly proffered at the request of the late Dean Friedlander, whose many years of devotion to the Cincinnati General Hospital vastly outrank my few years as head of the department of medicine. His experience and observations were never regularly recorded, but without him I think there would not be even a preliminary report.

A municipal hospital is a public institution which provides medical relief to the indigent and medically indigent from tax funds. Such an institution is generally run by politicians whose main concern is economy, and rightly so. The medical affairs are always subordinate to the fiscal and are conducted by doctors who contribute their time and energy to a cause. The bulk of medical practice is done by interns who work for nothing except the chance to make up for the inadequacies of their medical schooling. This bargain with the intern has little to do with graduate training, for it really prepares a man for graduation. If the intern stays a few years, he does so to become a specialist, and that should require graduate training. In that particular bargain the municipality has no interest as long as medical costs are decently low and medical practice not scandalous. The interested parties in this bargain are the voluntary staff doctor and the resident. The former has his conscience to guide him, checked and balanced by the competition of his erstwhile pupils now out in practice. The pupil is protected from exploitation by his instinct to rove and, to a slight degree, by the American Medical Association which approves the hospital for residency.

In this eminently simple arrangement to meet the very specific needs of an exacting society, no plan has developed nor has a directing mind led. A very

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few postgraduate schools exist. They are not counted in the American Medical Association list of approved hospitals. Medical colleges and privately endowed hospitals have taken the lead in graduate training but have by no means dominated. In university hospitals graduate training is secondary to undergraduate education—mostly an afterthought. In most municipal hospitals, the cost has restricted the practice to a point that graduate training cannot thrive unless private funds and medical teachers from a university are invited to share the cost of graduate training. In most circumstances, the cost is the most important consideration; the quality of practice is the second; teaching is the third and last. Since politicians are easily pleased with the quality of medical service furnished to the indigent, and as there has been no scarcity of self-acclaimed specialists, municipal hospitals have had no reason to go in for the job of training graduates.

In spite of haphazard methods, and often with little investment, except of time, many good specialists have appeared in most fields of practice in the United States. In this situation I think the graduate student himself has taken the responsible lead and the system works because the student himself has been the most interested party. No small factor in this process is the fact that the student is fully matured, knows his own mind, knows what he wants, and gets it.

Graduate training in internal medicine has never been planned in the Cincinnati General Hospital in the twenty-three years, more or less, of its existence. Of a succession of residents and assistant residents, only those who stayed two years or more are counted in this study—83 men in twenty-three years. All of this time, the faculty of a school of medicine has been solely responsible for the care of patients and the teaching of undergraduate students. The primary concern of all these residents was the care of patients. They were never until recently responsible for undergraduate teaching and they were not paid, except the chief resident, who received a small salary because of certain administrative burdens. A traveling fellowship usually to Europe was awarded previous to the residency each year for a period of seven years and then discontinued. A large share of responsibility was put on these residents and very few teaching or research fellows were present to associate with them, because the University budget for the department of medicine was generally very small.

A study now of these residents as to where they came from and where they have gone, is useful since this has been an experiment in graduate training which has gone on of itself rather than by being conducted. In twenty-three years, 83 men have been two or more years on the service, counting the internship as one year. They are now engaged as follows:

| | | | |
|-------------------------|----|--------------------------|----|
| General practice..... | 6 | Student health | 2 |
| Internal medicine | 51 | Army Medical Corps | 1 |
| Dermatology | 2 | Administration | 1 |
| Neuropsychiatry | 2 | Dead | 4 |
| Pediatrics | 3 | Not located | 4 |
| Surgery | 3 | | — |
| Tuberculosis | 3 | | 83 |
| Radiology | 1 | | |

Of the 51 found in the practice of internal medicine, 17 are diplomates of the American Board, 28 are self-listed as internists in the American Medical Association Directory, and the remainder are still in training, or not yet listed. Of the 51 now classed as internists—2 were 7 or more years in training; 6 were 6 or more years in training; 9 were 5 or more years in training; 13 were 4 or more years in training; 13 were 3 or more years in training; 8 were 2 or more years in training.

In the course of their training,

- 1 man served a year or more in 5 hospitals;
- 1 man served a year or more in 4 hospitals;
- 13 men served a year or more in 3 hospitals;
- 15 men served a year or more in 2 hospitals;
- 21 men served only in Cincinnati General Hospital.

Besides the years spent at caring for patients,

- 11 men spent a year or more in pathology;
- 2 men spent a year or more in physiology;
- 1 man spent a year or more in biochemistry;
- 1 man spent a year or more in pharmacology;
- 15 men spent a year or more in experimental medicine;*
- 1 man spent a year or more in basic science;**
- 4 men spent a year or more in clinical pathology;†
- 3 men began to practice with a preceptor;
- 11 men had spent from 1 to 9 years in general practice.

Fourteen medical schools graduated these 83 men: 27 were from the University of Cincinnati, Johns Hopkins being the school second in numbers. 37 of the 83 were resident in Cincinnati or nearby (or fellows or junior teachers in the University of Cincinnati). In the same area there are 30 diplomates of the American Board who were not trained in the Cincinnati General Hospital.

It can be said fairly that this school for graduate training has had little financial support from any source. Only in recent years has any considerable fund been at hand to provide laboratory and maintenance of fellows who are needed to do the clinical research in the wards with these residents. It can be said fairly, also, that graduate instruction has not cost the municipality a cent and meanwhile has provided a high grade of medical care.

In viewing the *curriculum vitae* of this small host of residents, it is quite obvious that they were matured men who knew what they wanted and got it. I, being a newcomer, have had nothing to do with much of it. I have been permitted considerably more freedom to plan than my predecessors enjoyed. The main change in plan has been to appoint more than double the number of residents; to have all of them share in undergraduate teaching, i.e., of ward clerks; to retain a few on fellowships to do clinical research, mostly with problems arising at the bedside;

*Clinical research, but not medical care.

**In the University of Cincinnati.

†In the Central Laboratory of the Cincinnati General Hospital.

and to set up a tutorial system using fellows and ex-residents to tutor undergraduates in wards and dispensary.

From the experience of my predecessors and from my own experience, a few points emerge that may summarize this discourse.

SUMMARY

Graduate medical training will get on well in a municipal hospital if there is enough supervision to guarantee a high grade of practice and if there are a sufficient number of patients at hand. It will get on much better if there is a faculty present doing undergraduate teaching. It gets on best where there is, in addition to the above, a generous amount of clinical research. Graduate training, as well as undergraduate teaching, deteriorates very quickly when research is not supported. Research, even the somewhat disparaged clinical research, should not be forced in any scheme of graduate training; it should be coaxed and offered to a favored few.

A large responsibility of directing a department in a municipal hospital is to prevent the loss that comes when research laboratories are compelled to carry the routine. Today's experiment becomes tomorrow's necessary routine. This routine should be borne by the municipality. To persuade the public that yesterday's experiment is now a public charge, or rather a good public investment, a few facilities must be kept at hand in first class order.

1. A record system with personnel able to compile and analyze hospital records.
2. A strong department of pathology, able to analyze all hospital deaths in conference.
3. A clinical laboratory able to carry all the routine of medical practice of high order, and do it accurately. This includes x-ray as well.
4. Adequate space for experimental laboratories.
5. A generous number of medical residencies, including service in tuberculosis, neuropsychiatry, dermatology and contagious diseases when possible. These appointments should be on a yearly renewable basis of the push-up type.
6. A generous number of able practitioners who will give their time for voluntary visiting, and by their experience out of the hospital mould the graduates' training to meet outside conditions.
7. A few fellowships with maintenance in the hospital at public cost to do clinical research and live with the residents and their problems.

Now that the diploma of various boards has increased the demand for graduate training beyond the opportunities to get such training, the University Hospitals should take the lead in graduate training and hope to regulate it by setting standards.

It is beyond the scope of this paper to orient graduate training to the job of producing general practitioners, or to find its relation to basic medical science and teaching. Such considerations are very important, but not here.

Graduate Teaching in Pediatrics*

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THE PROBLEM

Before a plan can be evolved for graduate training in pediatrics or any other subject, not to mention discussion of it, there should be some idea of its objectives. Is the attempt to be made to train future practitioners, teachers or investigators? Secondly, having the plans, are there available the personnel, the equipment, the resources, or—to summarize and at the same time to be guilty of a metaphor—the field in which these young stallions (and occasionally a smart mare or two) can gambol and also be trained for the race ahead? Can the job be done well and can it be added to the many duties which the University demands of its servants and which are already difficult to accomplish with any pretence of thoroughness?

AN APOLOGY FOR THE UNIVERSITY

It is impossible at this point to pass the opportunity to insert a parenthetical paragraph when one has before him such a galaxy of deans. What I wish to emphasize is most easily got at by posing a question. Why is it that universities presumably—and I employ the word “presumably” with deliberation—why is it that universities select heads of departments because it is thought that they have ability as teachers, investigators or clinicians, and then proceed to make it almost impossible for them to exercise any of these functions? Of course, fortunately, the university does not always succeed but it makes a vigorous attempt by the many demands of administration which could be done better by office personnel, by the institution of too many requests for reports, by the succession of too many committee meetings, by—but why go on and why bring up the subject of better departmental budgets in these parlous times? As a matter of fact, I am sure that this is all unkind since many deans are in the same ghastly fix as the rest of us, and have just as much fun in doing their jobs under difficult conditions. I could tell you how to remedy this situation but that will be the subject of another communication and I must keep you in suspense.

THE DEFINITION

I shall try to hold verboseness within bounds and discuss only one type of graduate training in pediatrics; namely, that for the practitioner. I can claim enthusiasm for such effort because graduate training is to me one of the happiest

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functions of a university. It is possible, of course, only when undergraduate training is also well developed and it belongs, therefore, usually only in a university, although there are exceptions to this statement. It is graduate and not meager postgraduate study which is being discussed—for the latter I personally have little stomach and much question as it is often planned.

THE STUDENT

If time, energy and money are to be spent on the graduate student it is important to select him with care. This is somewhat easier than in the case of the undergraduate, because there is an opportunity for longer observation in which someone can determine capabilities. By securing his history and by correspondence much can be learned of the prospective student, but it is still necessary to see him and talk to him. One should not, of course, expect too much nor expect this too often, but if he has worked hard to make his graduate course worth while, he will wish it to be offered to those who will profit most from it, who will use what knowledge and experience the course can give to the best advantage. I may assume that there is nothing but cold fact devoid of sentiment (or associated with it without any great harm) in the wish, if he happens to be a pediatrician, that an optimum job should be done for children, and in the desire to spread this opportunity as widely as possible.

In addition to the record on paper, then, he must determine whether the prospective graduate student has the spark which will lift him beyond mere technical and mechanical performance. I know of no better way to discover this in the frequently short time available for personal observation of a candidate than to ask him: "Why did you want to be a pediatrician; what influenced you?" Some of the reasons given are not too good, albeit illuminating. Perhaps, the candidate was unconsciously prodded by admiration for a pediatrician whereas it should have been the subject of pediatrics which fascinated him; perhaps, it was an opportunity which he thought should be seized; perhaps, it was a fear of getting out into the world to combat the New Deal or a desire to be cloistered a few more years until he could discover whether socialized medicine was going to make it too tough for him; perhaps, he wanted to be a surgeon but could not get an appointment in a good department, and there are many other reasons (or, better, excuses) which can be brought out into the open.

I am not sure that one of the most acceptable reasons, although it demonstrates lack of self-analysis, is not the honest answer, "I'm damned if I know, I just wanted to be a pediatrician." That type of hankering—like a playboy for a blonde—is, at least, understandable, and if it is accompanied by an ability to produce the goods something may come of it. The point is, that one must search for potentialities and hope that occasionally he will be lucky enough to see them develop. All this recognizes, naturally, that the graduate course cannot make a sow's ear into a silk purse; at best, it can only put a bug into the ear (which is exciting but not helpful) or a coin into the purse to encourage future accumulations there.

METHOD OF TEACHING

Having selected the student, what should be done with him? If he is to be made into an acceptable practitioner he must work and not simply be an observer. While it is his brain which should be stimulated, his hands must not be neglected. No better mechanism exists than placing him as a resident in a hospital where he is busy, and where, if he is capable, he has responsibility under supervision, or where, in other words, his medical adolescence is guided.

Didactics play a rôle but a supplementary one. It is the study of the individual patient; the working back from symptoms to causes and pathologic changes and then forward again to diagnosis, prognosis and treatment; it is the example set rather deliberately but unobtrusively; it is, in short, the fun of discussion and the mixing of wits and the expression by all of opinion which teach better than the lecture. I have forgotten about whom it was said that "When Doctor Blank makes rounds, it's queer but he always finds something interesting." That is significant, and it points to the importance of a study of the commonplace and to the ability to make it exciting. Anyone can demonstrate the unusual, and it is a relief to encounter it from time to time, but it is not the important part of practice with which the future practitioner must deal.

The student must be taught to be a physician who can use his eyes, ears and hands to supplement his gray cells, and not simply to be a fellow who adds together the laboratory examinations made by others in the attempt to find an answer. Of course, he must know the meaning and often the technique of these accessory aids when they are actually needed, but he must not be slavishly dependent on them.

Certainly, the graduate student can be shown better by example than by formal words the necessity of regarding the patient as a person and not simply as a case. There must be alertness in hospital practice to recall that it constitutes an abnormal environment no matter how well it functions. "What would be done in the home in such a situation?", is a question to be asked frequently. There is no law as yet which allows grandmothers to be kept in solitary confinement or to be anesthetized when they interfere: in hospital practice, we can tie them outside, but in the home it is they who are the ones who tie the knots. We must teach the student that the child has as much right to have relief from pain as he himself would demand—he forgets sometimes that the night nurse listens to howling which will in practice get him out of bed. We must tell him that he cannot continually run briskly about sticking solutions into breasts, buttocks and veins, and that perhaps water, taken orally, might be a reasonable way to fulfill fluid requirements. Somehow—perhaps both by example and admonition—we must teach the student that physical reactions are linked to mental and nervous ones. Every physician is a psychologist and psychiatrist of sorts—whether a good one or a bad one, whether unconsciously or deliberately. The pediatrician cannot be responsible for the mental reactions and ills of parents but he cannot ignore them since they have a marked effect on his patient—the child.

There have been mentioned only a few of the phases of teaching of the graduate student. There are many others and the teacher must somehow prepare his future practitioners to be part of the community. By stimulation and example some interests must be created or encouraged which extend beyond the mere business of being a doctor.

THE TEACHING OF THE GRADUATE STUDENT IN PEDIATRICS
AT THE UNIVERSITY OF CINCINNATI

This has been a long preface but, perhaps, a necessary one before there is described our equipment for graduate teaching of pediatrics in Cincinnati. The Pediatric Department itself has evolved on the premise that it has the five functions of investigation, undergraduate teaching, graduate teaching, care of patients

TABLE 1—DEPARTMENT OF PEDIATRICS, UNIVERSITY OF CINCINNATI,
COLLEGE OF MEDICINE

| Teaching | The Functions Care of Patients | | | Investigation (Clinical and Laboratory) | Public Health Activities |
|--|-----------------------------------|------------------------------|--|---|---|
| | Outpatients | Inpatients | Others | | |
| Undergraduate students. | Children's Hospital. | Children's Hospital. | Day nurseries. | Children's Hospital Research Foundation. | City, State and National Health and Welfare Associations, private and public. e.g., |
| Graduate students (including resident physicians). | Cincinnati General Hospital. | Cincinnati General Hospital. | Special schools (Board of Education). | Children's Hospital. | Board of Health, |
| Informal post-graduate courses. | Welfare stations. | Contagious Disease Hospital. | Mothers' Training Center (Nursery School). | Cincinnati General Hospital. | Public Health Federation and its cooperating societies: |
| Nurses, Social workers, Dietitians, Teachers, Mothers. | | Convalescent Home. | Summer Camps. | Welfare stations. | Babies Milk Fund Association, Milk Commission. |
| Seminars. | | Preventorium. | | Day nurseries. | Academy of Medicine committees. |
| History meetings. | | Tuberculosis Sanatorium. | | Orphans' Home. | Negro Health Center. |
| Undergraduate Pediatric Club. | | Orphans' Home. | | | |

The Teachers

Full time, Part time and voluntary personnel.

and community contacts—anything less than this would make for incompleteness and tend to a static rather than a dynamic group. Another premise we have adopted is that pediatrics is not simply the care of the sick child. If all this is true, teaching must be carried out in a field which is much broader than a hospital, necessary as this is. In Cincinnati, we are fortunate in having a number of affiliations which allow us the direction of the care of well children as well as sick ones, and which include in their activities most of the phases of pediatrics. These institutions and organizations are shown in the accompanying table (Table 1) as they relate to the functions which have been mentioned. Not all of them are direct responsibilities of the Pediatric Department; with some the contact is in the nature of participation but still it is sufficiently close to furnish facilities which are available for teaching and study. It is by such agreement and

affiliation that the Pediatric Department, the Medical School and the University benefit and give help, and facilities are acquired which cannot, and in some cases should not, be financed from university funds.

In the attempt to use these facilities for graduate teaching we have developed a plan which appears to work satisfactorily. Most of our group of seventeen residents (or graduate students) serve for a period of at least two years. They are not accepted as students unless, with other qualifications, they have had at least an internship of one year and almost all of them have seen longer service than this and usually they have previously had pediatric residencies. During their first two years with us they work in several institutions and have contact with several organizations dealing with the various phases of child care. This plan is shown in Table 2.

TABLE 2—THE ROTATING SERVICE IN THE DEPARTMENT OF PEDIATRICS, UNIVERSITY OF CINCINNATI, FOR THE TRAINING OF RESIDENTS (GRADUATE STUDENTS).

| FIRST YEAR | | |
|--|---|---|
| Two months on each service: | <ul style="list-style-type: none"> Pediatric wards at General Hospital Contagious wards at General Hospital Private service at Children's Hospital Medical service at Children's Hospital Surgical service at Children's Hospital As resident physician at Children's Convalescent Home | Regular history meetings, case presentation meetings, seminars. |
| SECOND YEAR | | |
| Four months as Chief Resident on either: | <ul style="list-style-type: none"> Pediatric wards at General Hospital or Contagious wards at General Hospital | Rounds daily. |
| Two months on each service: | <ul style="list-style-type: none"> Babies Milk Fund clinics Ohio Soldiers' & Sailors' Orphans' Home at Xenia, Ohio Private service at Children's Hospital Infant wards at Children's Hospital | Residents also attend Junior and Senior lectures. |

This, then, is the field and the plan. I have spent little time in discussion of them because they have been described elsewhere¹ and because they are not so important as the manner in which they are developed and used. First, the student must be able, and the institutions and organizations described must function efficiently. The real essential, however, is that those responsible for teaching have the true academic spirit and the desire to impart what knowledge they possess and honestly to admit uncertainties; to teach principles and not

1. Mitchell, A. G.: The Department of Pediatrics, College of Medicine, University of Cincinnati, Methods and Problems of Medical Education, s. 11, New York, The Rockefeller Foundation, 1928.
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 Department of Pediatrics, College of Medicine, University of Cincinnati, *J. Pediat.* 4, 256, 1934.
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 Bachmeyer, A. C., and Mitchell, A. G.: What hospitals can do to improve pediatric service, *Mod. Hosp.*, 34:56 (May), 1930.
 Mitchell, A. G., and van Buren, F. R.: The Children's Hospital of Cincinnati in its relation to service, education and research, *The Medical and Professional Woman's Journal*, January, 1934.
 van Buren, F. R.: This clinic gives individual service to each patient, *Mod. Hosp.*, 44 (June), 45 (July), 1935.

rules or dogmatism; to avoid extremes; to listen to and weigh the opposite opinion; to realize that teaching, while necessarily dealing with fundamental and acceptable facts, should encourage thinking on the part of the student; and to believe that the job of teaching is worth while.

THE FUNCTIONS OF THE UNIVERSITY

The universities of this country have a great responsibility, as Alan Gregg² has so well pointed out. In the past we have accepted much from Europe. Today, there have been, first, the dictators and, then, the war to submerge academic freedom and progress. If we in this country cannot preserve academic freedom, it will be lost for a long time to come. It bothers me little that I may be regarded as a sentimentalist if I state that I am happy to be part of the university group who must carry on, although I function only in the relatively unimportant field of pediatrics. It bothers me more that I have found myself delivering a poor address instead of giving you what I was asked to do; namely, a satisfactory explanation of the functioning of our graduate course in pediatrics at Cincinnati.

2. Gregg, Alan: North American responsibilities for the University, 1964-1964, Science, 89, 569, 1969.

Nebulism

Worthless words by the acre sown,
Will not for lack of thought condone,
A thing worth while is better told
In simple words that shine like gold.

So when a story's to be told,
Use words its meaning to unfold,
That all who listen easily learn,
Are not confused nor caused concern.

The simple word is crystal clear,
And odd though it may first appear,
He best explains the most complex
Who uses simple clean syntax.

The sophomore may be quite excused
For pouring words, or if imbued
With the belief that speech facile
Can take the place of learning's seal.

But age we cannot so excuse
For misty words that youth confuse;
For use of words so big and lax
That make the simple thing complex.

H. A.

I

The Training of Surgeons: Method in Use at the Cincinnati General Hospital*

MONT R. REID

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My remarks on the training of surgeons must necessarily be of a general nature since, in this program, other members of our department of surgery will describe for you, in detail, the various phases of our plan of training surgeons at the University of Cincinnati.

For the representatives of the Association of American Medical Colleges, it is quite unnecessary for me to discuss the merits of the different plans which are now in use for training surgeons in this country. It will suffice for me to say that we have elected to adopt a long period of instruction, in a resident system, for the graduate training of surgeons. It may, however, be of some interest to you to state why we believe this system to be best suited to the facilities we have for training surgeons. In such a discussion, the welfare of our patients as well as that of our trainees must be considered.

In a large general hospital, such as ours, which is filled entirely by charity patients, acute and difficult surgical problems are constantly arising, day and night. Experience has taught us, and statistics have proven, that our results are better under a strong resident system headed by an exceedingly competent chief resident surgeon. In our graduate school of surgery there are fourteen men who live in this hospital. The head resident (occasionally two of them) will have been in residence five or six years as assistant resident surgeon. During those years, he will have been under the constant tutelage of preceding residents and of the members of my department who devote a great deal of time helping at the operating table, and in other ways, the assistant resident surgeons. In other words, the main responsibility for the care of patients in this hospital rests on the shoulders of the chief resident and his assistants. Never have we been bothered by our chief residents over-stepping the bounds of their capabilities and responsibilities, for they have a genuine respect for the checks which will be described by other members of our department. Unlike some others, with whom I have discussed this subject, I have no fears of the autocratic domination of my resident staff. On the other hand, the responsibilities which I have given them have resulted in far more efficient care of my patients than under the old system when action was postponed for the consultation and orders of the attending staff which, as you know, are all too frequently deferred until morning.

*Read at the Fiftieth Annual Meeting of the Association of American Medical Colleges, held in Cincinnati, Ohio, October 23-25, 1939.

*From the Department of Surgery of the College of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

In a hospital, such as ours, where we must be organized to meet the difficult problems of acute emergency work, the care of the routine elective surgery becomes a relatively easy problem. At the beck and call of my resident staff there is always on call at night, and in the hospital during the day time, some member of my staff to help out in the operating room or to give advice on the wards. Not long ago a representative of the Council of Medical Education of the American Medical Association interviewed my chief resident. He arrived without warning and was greatly annoyed because my resident, who was operating, could not see him for several hours. He then proceeded to criticize severely the privilege I generally give to my residents of planning and executing their daily operative schedules. After listening to the various operations this particular resident had been permitted to do, on his own responsibility, he condemned, without examining our results, the unsupervised training of our surgeons. This resident had the rank of instructor in our Department of Surgery and was more frequently chosen by the nurses, students, interns and resident house officers to operate on them than was any member of the attending staff. Fortunately, this criticism did not worry me, for I realize the difficulty of evaluating the different systems of training surgeons. There is certainly no unanimity as to what plan is the best. A plan which will yield the best results in the hands of one director of a surgical department may be totally unsuited for that of a director in some other school. It seems to me that the caliber and success of the men trained, together with the results of the patients utilized for the training, must for the present be our best guides as to the value of any system of training surgeons. So far as our school is concerned, some statistical figures will later be given by Dr. Carter.

The delegation of responsibility wisely and at the proper time is, in my judgment, a most important factor in the development of any surgeon. Properly done, it results in more hard work, interest and enthusiasm and devotion to the welfare of patients than any dictatorial or rigidly regulated regime with which I am familiar. With the development of such a spirit in a department, the director rarely needs to worry about the abuse of privileges which have been granted. Zealousness in the success of the service nearly always makes the resident lean over backward in securing advice and help on any problems with which he has any doubts as to his abilities to handle.

The success of our plan demands extraordinary magnanimity and patience of myself and the members of my department. Endless conferences must be held, problems must be discussed; hearty welcome of new ideas and suggestions must be maintained even though they prove to be old or useless; papers must be rewritten and published under the names of the men who have done the work.

Great respect and admiration from the resident staff are very essential but it is most desirable to have them combined with a genuine spirit of friendliness and devotion. Another essential of our plan is to have the members of the senior staff so well trained that they do not feel the necessity of further operative experience.

Our policy has been to select the best men from our list of applicants, regard-

less of school or hospital affiliation. Throughout the years, about 25 per cent of them have come from our own medical school. Even with the most careful selection not all of them prove to be capable of assuming the duties of a head resident. Since the organization of our graduate school, sixty-two men have been taken on the resident staff. Of this number eighteen, or 29 per cent have become senior residents. In this time not more than three men have left of their own volition. Telling men that I do not regard them capable of swinging the job of senior resident has caused me many sleepless nights. So often, they are the very ones I like most personally. My policy has been to let them know a year in advance of their leaving and then to arrange for them to get, during that year, the greatest amount of practical experience I can give them. Rarely have I let men go with less than three or four years of training. They have all done well and, so far as I know, there have been no hard feelings.

Thus, practically speaking, we have been turning out each year a chief resident, with six or seven years of training, and an assistant resident, with three or four years of training.

Since we could not turn out each year more trained surgeons if we adopted the policy of a shorter period of training, it seems to me that the duration of time involved is not a matter for serious consideration. What is vitally important is the value received for the time spent in training. The men to whom we choose to give the experience of a chief resident are those who we believe have the qualifications of becoming leaders in the the field of surgery. In their added years, they have the chance of developing executive ability, of teaching, of doing research work and learning how to write scientific papers, of learning how to present cases and of speaking to audiences; of developing unusual surgical judgment and confidence in their operative ability by handling an extraordinary number of difficult surgical cases in which every error of judgment and operative technique is subjected to a critical analysis by the attending staff. These are men whose influence in the field of surgery should extend beyond the confines of the communities in which they choose to live.

On the other hand, it would be unjustifiable for us to spend such time and energy on a man whose capabilities and interests obviously will limit his career to that of being a safe and satisfactory surgeon in the community in which he might live. Nor can the added expenditure of time be justified from the trainee's point of view even though it is hard for him to realize it at the time our decision is made. Men falling into this group are the ones we endeavor to give a good practical training in surgery and then let out of the graduate school after three or four years.

That both of these policies have been justified has been, I think, proven by the records of the men who have been admitted to our graduate school of surgery. The selection of the men has, in general, been made with these two aims in view, for we believe it advisable, from the standpoint of the system, as well as of the patients, to have in training, at the same time, good practical wheel-horses for work, and men of unusual ability and promise of becoming outstanding leaders

in surgery. If all of them fell into the latter group, I doubt if we could stand the strain, for it is from such men that we often receive the greatest tax on our patience, generosity and endurance. Yet, they are the men to whom our position of chief resident goes and for whom the added experience of executive duties, work and guidance seems to be most worth while if they are ever to reach the pinnacle of their potentialities.

These few remarks, in general, explain the philosophy which is back of our plan of training surgeons; more intimate details of the actual operation of the plan will be presented by other members of the staff. But, before doing this, I want to speak of some problems which have become a matter of definite concern to those of us who are actually engaged in the business of training surgeons. They are problems in which this Association and several others cannot much longer escape taking a more active part.

The Association of American Medical Colleges, and others in this country, has gradually come to admit a definite responsibility for the training of surgeons to meet the needs of the people of our country. Your willingness to entertain ideas along this line from the members of my surgical department bespeaks your interest in the subject, and I, in return, gratefully acknowledge the privilege of presenting to you our ideas and our efforts in connection with this problem in which we, as a member of your Association, feel a definite responsibility.

However, an unescapable corollary to accepting the responsibility of training surgeons for this country is the necessity of protecting our citizens against the doctors who do not have the ability, the training or the conscience to practice the art of surgery. These two duties to the public are inextricably interwoven and, in the final analysis, it appears to me that the solution of either one of them can only be accomplished in conjunction with the solution of the other.

I cannot now believe that the solution of the correlated problem of protecting the public against inadequately trained surgeons will naturally solve itself when a sufficient number of adequately trained surgeons is provided. On the contrary, it is my judgment that this movement to train for our people better surgeons will soon be seriously handicapped unless there proceeds with it an equally determined movement to deny people the services of incompetent surgeons. This is a serious problem, one, in the solution of which, I fear our sense of professional ethics has made us timid in the performance of our duty.

It is true that this Association, the American Medical Association, the American College of Surgeons and the various surgical boards have kindled a keen interest in training good surgeons and in labeling as "competent" many of those who are practicing surgery. The same organizations, together with the hospitals, have done very little in eliminating from the practice of surgery those who are "incompetent" (to practice it). The problem of solving this responsibility to the public is a difficult one. However, if it be professional, then I am sure we cannot any longer sidestep that responsibility without seriously interfering with our program of training more good surgeons. It will be many, many years before the intelligence of the public can be relied on to solve this

problem. There can be no doubt that the public's inability to judge the fitness of surgeons has been a large factor in the slow progress we have made in graduate surgical education. That same inability of the public is already a serious blow to many well trained surgeons and will soon be a serious handicap to our whole plan of better graduate education in surgery unless the public is helped to make wise decisions.

It is no secret that many of our hospitals countenance unethical and unsatisfactory surgical work because they are faced with the necessity of filling beds in order to bring in revenue. Some will frankly admit that they can see no reasons for denying themselves this revenue when the barred doctors will take this revenue to other hospitals.

I have talked with the leading surgeons of many hospitals where there are excellent facilities for the training of good surgeons. Some of these men have been trained in good resident systems, and admit the values of such a system to the hospital, to the patients and to the training of surgeons; yet they are frank in saying that they are not interested in training men who will go out into practice, become their competitors and reduce their own incomes which, at best, may be relatively small for the strictly ethical and conscientious surgeons who are capable of training other surgeons.

Not long ago, a brilliant young man, who had just completed his training in one of our outstanding graduate schools of surgery, came into my office to talk over his future plans. His school happened to be in one of our largest cities and he had looked into the possibilities of entering the practice of surgery in that city. He had talked with many doctors and particularly with younger surgeons who had had similarly good training. He was told frankly that unless he was willing to split fees it would practically be impossible for him to make a living in that city. The picture, of course was overdrawn. Yet this man was appalled by the possibility of having to compromise his ideals of surgery in order to make a living. During his training, he had made some noteworthy investigations in the field of surgical bacteriology. Rather than face such a situation, he was anxious to come onto my staff and take charge of surgical bacteriology for a salary of \$2,500 a year, which would barely afford him a living. Whether true or not, this is a very common fear among well trained, conscientious surgeons who wish to go out into practice without sacrificing the ideals which have been inculcated in them. In some way, this deterrent to the honest practice of surgery must be eliminated, if we are to make genuine headway in this business of training more good surgeons to meet the demands of our country.

It has been estimated that from eight to ten thousand well trained surgeons could adequately serve the needs of our citizens for surgical treatment. The American College of Surgeons has put its stamp of approval on about twelve thousand men who are practicing surgery in this country. Granting that, in this matter, many mistakes have been made, the people of this country would be far better served if all the surgical work done was limited to men so approved. During the past year forty-seven thousand doctors did the two million operations

performed in this country. If the public cannot and will not distinguish between good and bad surgeons, the incentive to train better surgeons cannot help but be lessened. I believe that the public deserves better surgical care but is incapable of choosing it. How, then, is the problem to be solved? If by the public, what organizations will take the initiative in educating the people so that it can solve it? If by the profession, are we doing all that can possibly be done in this direction? If by laws, what organizations should take the initiative in promoting the necessary legislation?

This business of unregulated and uncensored surgical practice is not only a matter for serious consideration in our program of graduate surgical training; the public is paying an enormous toll in the unnecessary loss of lives.

I trust that you will not misinterpret these general remarks for I am heartily in favor of any program which will train better surgeons. I do hope, however, that they may serve to make this Association take an active part in reforming our present system whereby the public will be assured the services of such men when trained. As I have said before, neither problem can satisfactorily be solved without solving the other.

II

The Plan of Services for Graduate Students at the University of Cincinnati*

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I present three tables which are designed to show two things: The first one is an outline of the services arranged for the clinical and operative training of men in the Graduate School of Surgery of the University of Cincinnati; the second is the volume of material one is privileged to study during his years of instruction.

There are several terms to define. The "chief resident" is called "resident." Sometimes there may be two men of equal rating or there may be one man of less experience who is designated as "co-resident" and who looks to the chief resident for the settlement of many of his little problems.

TABLE 1—SCHEDULE FOR RESIDENT STAFF, DEPARTMENT OF SURGERY, 1939

| SERVICE | TIME | NUMBER OF MEN |
|------------------------------|-----------|-------------------|
| Surgical Pathology and Tumor | 6 Months | 1 |
| Experimental Lab. | 6 Months | 1 |
| Vascular & Transfusion | 6 Months | 1 |
| General Surgery | 6 Months | 2 |
| Urology | 6 Months | 1 |
| Fractures | 6 Months | 1 |
| Holmes Hospital | 6 Months | 2 |
| Emergencies | 6 Months | 1 |
| Neurosurgery | 6 Months | 1 |
| Children's Hospital | 6 Months | 1 |
| Gynecology | 6 Months | 1 |
| Univ. California | 12 Months | 1 |
| First Assistant Resident | 6 Months | 1 |
| Resident | 12 Months | 2 |
| TOTAL | 14 | 8 Years 17 |

The "first assistant resident" is next in line for the residency. He retains his title of "assistant resident." He may be on the service for six months or more, but there is never more than one assistant resident at any time.

The remaining members of the resident surgical staff are "housemen."

The interns participate in a general rotating service throughout the hospital and are not to be considered in this discussion.

The hospital duties of such men are fairly well defined throughout the country and ours offer few exceptions. On any service, a houseman is expected to check all histories obtained by medical students or interns, to make a complete physical examination and any special examinations deemed necessary. These are entered on the records as separate notes from which he will draw his own suggestions for further study or treatment. He is encouraged to respect and depend on his own observations and opinions. In addition, a houseman is responsible for the conduct of interns and students on his service. He is to inspect the records

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*From the Department of Surgery of the College of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

daily for proper entrances of adequate progress notes. He sees all of his patients at least twice daily and once daily he inspects all wounds requiring dressings. On special services, such as gynecology, vascular diseases, urology and fractures, he is first assistant to the attending staff or is assisted by a member of the attending staff in the operating room. All operation notes are dictated by him. He is in full charge of his wards, but is under the supervision of the assistant resident and resident who hold him to account for anything that happens on his service.

Each houseman receives a month's vacation during the summer. During the rest of the year, it is usually possible to take leave for a few hours on one or two nights each week and every third Sunday afternoon. At these times another houseman takes his calls and it is through this relief work that men become acquainted with new services before they are assigned to them. If help is needed, a resident or assistant resident is always available.

The services listed in Table 1 do not necessarily follow each other in the order given. The first two have already been described.

The vascular service takes care of all cases of venous or arterial diseases which require surgical attention. In the main, this includes cases of acute arterial occlusion, chronic occlusions with active or impending gangrene, inflammatory diseases of vessels, traumatic injury to major vessels of the extremities and aneurysms of congenital and acquired types. Recently, we have added the surgical care of all chronic leg ulcers, since we have adopted an active radical therapy in the management of these cases. The doctor on this service is in charge of the varicose veins clinic and the original vascular clinic, each of which meets once every week.

The duties of a man on the transfusion service have been greatly reduced with the development of a blood bank at the hospital. The typing, matching and banking of bloods are in the hands of full time technicians. Doctors are responsible for the drawing and transfusion of blood and are under the supervision of the surgical houseman in question. This man is most valuable doing emergency work in the operating room when all doctors assigned to a particular patient are scrubbed and actively engaged in the operation. When a transfusion is needed, the houseman on transfusion service is called. The job is done quickly, efficiently and without disruption of the operating team.

General surgery is divided between two housemen. One takes the adult male wards, the other, the adult female and children's wards. They alternate at the end of three months. These men act as first assistants to the operators of their own patients. As their trainings advance, they are permitted to perform a few operations under the guidance of the resident or a member of the attending staff.

Although urology is a branch of the Department of Surgery, its attending staff is made up of urologists and not general surgeons. It does not have a separate resident system. The surgical houseman is the resident for six months. He is taught to do all of the urological studies and by the end of the course does a large part of the major surgery under supervision. He also manages the urological dispensary and handles the bulk of consultation work, since these patients usually are in need of urological studies. Again, if the houseman is in

need of emergency help, the general surgical resident is always at hand. The Urological Division has its own ward, class room and cystoscopic rooms on one floor.

The fracture service is a branch of general surgery and not a part of orthopedics. The attending staff is especially skilled in fracture work. There is not a separate resident system and the surgical houseman is in charge of this service. These patients are admitted on the general surgical floors and are watched by the assistant resident and resident as well as the houseman. Every fracture case, except the head injuries, is seen in the admitting ward by the houseman on fractures. Every case needing a cast or skeletal traction is treated by him as an emergency day or night. Compound fractures are given immediate attention in the operating room by the resident. Cases needing open reduction are approved by the attending staff and usually done by one of them or the resident. The houseman and attending staff, naturally, take care of their own outpatient dispensary.

The Holmes Hospital is a private institution where two housemen are posted and one does the work of a surgical intern. These men are assistants in all types of surgery except eye, ear, nose and throat. It is an experience that is extremely valuable and highly prized.

A houseman on emergencies answers all calls from the Receiving Ward physicians who seek surgical consultation. All elective cases go through the surgical dispensary. Emergency cases of traumatic or inflammatory nature are first seen by this houseman, given complete work up by him and prepared for emergency therapy. He follows these cases to the operating room as first assistant to the resident night or day. He has no ward service other than such cases as he may have under observation. His mornings are occupied in the surgical dispensary, of which he is in full charge. He acts in the capacity of student assistant along with other housemen and members of the attending staff.

Neurosurgery shares its operative work between the attending staff and the resident. Most of the resident's work comes in the form of the acute head injuries and peripheral nerve injuries. Most of the elective cases come through the clinic which is attended jointly by neurologists and neurosurgeons. All house cases require complete neurological study by the houseman.

The surgical service of the Children's Hospital is managed by a houseman rotating through that service from the General Hospital. The assignment comes late in his training. He has all the privileges of a resident taking care of fractures, emergency and elective surgery under the guidance of members of the staff.

Gynecology, like urology, is a department of general surgery, but attended by its own staff. Their resident is one of the surgical housemen. He works with them in the dispensary, does every physical examination on admitted cases, assists in the operating room and is permitted to do major surgery for the usual pelvic and perineal disorders. He performs the elective curettements and manages all cases of abortion.

In 1933, an exchange fellowship was arranged with the University of California. The services there include general surgery and neurosurgery. Both

services are splendid in being well organized, offering a wide range of excellent cases and the finest of supervision.

The graduate student does not escape doing complete physical examinations and detailed note writing until he becomes an assistant resident. Impressions or local examinations are recorded, when necessary, or when found to contribute something of value to the chart. The assistant resident is truly an assistant to the resident. He relieves the resident of operative work that would ordinarily prove a burden to him during the day when it is to his advantage to be attending the more difficult cases. He relieves the resident in many of the night emergencies when rest is important for a hard morning schedule. When the resident is occupied in the operating room for the full morning, it is the assistant who makes complete rounds to pick up the troubles that have developed during the night. The same man arranges the clinical material for all the student classes on the ward or in the amphitheatre. He also helps with student instruction on his own rounds about the floors. He gives a series of lectures on general surgical diseases to the student nurses. There is the never ending clamor for advice from the younger men which would annoy a resident to no end if he had to meet all of it alone. Other services often need consultants for a patient. It is the assistant who carries the details to the resident if he is scrubbed and cannot answer the call. When the resident does get a chance to leave the hospital for an hour or two, it is the assistant who takes care of everything until he returns. The assistant conducts visitors about the floors when the resident is busy, and he usually is busy.

The resident operates every day, except Sunday, from 8:00 A.M. until the work is finished. He must see every emergency case and assign the operator or operate himself. He sees all of the wounds, fractures, diagnostic problems on the floors every day and the acutely ill cases several times a day. He answers all consultation requests by other services or takes the proper staff man to see the patient. He may choose to be first assistant in any case operated on by a member of the staff. He conducts members of the attending staff to the wards for advice on his own problems or when they may wish to inspect the wards. He must check his assistant's work and that of every houseman under him. The responsibility of every emergency is on his shoulders but he knows that a staff man is available should he need advice or technical assistance. The resident conducts a meeting of his entire resident staff five evening each week. At this time cards bearing the name of every patient on the service are checked as the intern and houseman report the daily progress. It is during these meetings that the entire system is correlated. Laboratory reports are given, plans for further investigation are made, operations are scheduled and patients are placed on the list for discharge. It is at this time that much is taught the houseman about diagnostic investigation and therapeutic management. During these meetings, the charts of patients for the day's dismissal are given a final check. From the file cards, the follow-up dates are made for the Sunday morning clinic which is attended by every member of the resident staff.

It is exceptional for a resident to spend more than six years in training. It is possible for him to have spent eight years (Table 1) should he have been assigned

to every service. This does not happen for several reasons. Some of the services overlap and are not necessarily repeated. Again, less than one-half the men have the privilege of the year in California. Often one of the services, such as surgical pathology and tumor, or experimental laboratory, may be broken into three or four month periods which will tend to shorten the total time.

TABLE 2—EXAMPLE OF A RESIDENT'S TRAINING IN THE GRADUATE SCHOOL OF SURGERY

| YEAR | SERVICE BEGINNING | SERVICE | TIME |
|-----------|-------------------|--------------------------|-----------|
| 1931-1932 | Sept. 1 | General Surgery | 6 Months |
| | March 1 | Orthopedics | 6 Months |
| 1932-1933 | Sept. 1 | Holmes Hospital | 6 Months |
| | March 1 | Fractures | 4 Months |
| 1933-1934 | July 1 | University of California | |
| | Jan. 1 | General Surgery | 6 Months |
| 1934-1935 | July 1 | Urology | 6 Months |
| | Sept. 1 | Assistant Resident | 2 Months |
| | March 1 | Gynecology | 6 Months |
| | June 1 | Experimental Laboratory | 3 Months |
| 1935-1936 | Sept. 1 | Assistant Resident | 3 Months |
| | March 1 | Emergencies | 6 Months |
| 1936-1937 | Sept. 1 | Resident | 12 Months |
| TOTAL | | | 6 Years |

Table 2 represents a list of services covered by one of the residents during his six years stay in the postgraduate school. Many of the services found in Table 1 are not present in Table 2 because they were being developed from a general service into special services during the six year period. Table 3 indicates the subdivision of these services under general surgery.

TABLE 3—EXAMPLE OF A RESIDENT'S TRAINING IN THE GRADUATE SCHOOL OF SURGERY

| Service | Time | Cases Admitted or Treated | Operations Assisted | Operations Done | Total Operations |
|---|--------|---------------------------|---------------------|-----------------|------------------|
| General Surgery { Neurosurgery Tumors Vascular Transfusion | 6 Mo. | 624 | 355 | 108 | 463 |
| Orthopedics | 6 Mo. | 196 | 142 | 22 | 164 |
| Holmes Hospital | 6 Mo. | 132 | 112 | 0 | 112 |
| Fractures | 4 Mo. | 410 | 14 | 1 | 15 |
| Univ. Calif. { General S. Urology | 6 Mo. | 202 | 160 | 49 | 209 |
| Assistant Resident | 6 Mo. | Not available | | | |
| Gynecology | 2 Mo. | 462 | 24 | 129 | 153 |
| Assistant Resident | 6 Mo. | 700 | 165 | 98 | 263 |
| Assistant Resident | 3 Mo. | 960 | No record | 133 | 133 |
| Assistant Resident | 6 Mo. | 1470 | No record | 226 | 226 |
| Emergencies | 6 Mo. | 164 | 108 | 26 | 129 |
| Resident | 12 Mo. | 2890 | 22 (Staff) | 685 | 707 |
| Total | 6 Yrs. | 8200 | 1097 | 1477 | 2574 |

In Table 3, under "cases admitted or treated," it should be known that patients examined or treated in the various dispensaries have not been included. The large number of patients seen by the resident and the assistant resident are those on all of the surgical floors under his supervision and requiring his attention one or more times daily. Again, it should be said that under "operations done," only hospitalized patients have been counted. A co-resident, with four years of training behind him, was also completing his final year at this time and received a similar proportion of work.

III

Graduate Teaching of Surgical Pathology at the University of Cincinnati*

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It is our belief that part of the training of a surgeon should include instruction and practice in the recognition of pathologic surgical lesions, both in the patient and in the gross and microscopic appearance of the tissues removed. In the early stages of his training, therefore, each member of our graduate school is assigned for a six months' period to the laboratory of surgical pathology. This laboratory is located in the operating pavilion, across the corridor from the main operating rooms, which permits easy correlation of patient, surgeon, pathologic material and pathologist. During this six months' period, the graduate student is responsible for the gross and microscopic description and diagnosis of all tissues removed in the operating rooms and outpatient clinics, under the supervision of the resident surgeon and myself. This amounts to approximately 1,000 cases which he must see, describe and diagnose. While he is not regularly assigned to any operating room work at this time, he has an opportunity to see many of these cases clinically at our weekly ward rounds and conferences. During this same six months' period he is also assigned to the radiation service and to the tumor clinic, so that he has charge on the ward of all patients who are receiving radiation therapy, and in most of whom he has had to see and diagnose the tissue removed at operation or for diagnosis. In the tumor clinic, he not only sees the patients but usually himself removes any material for biopsy, which he then sees microscopically in the laboratory.

During the school year, he is also assigned as one of the instructors to assist me in the course in surgical pathology for the junior class. He is usually assigned one or more lectures in this course, and is responsible for arranging any gross material for demonstration. He must be prepared to help the students with their microscopic preparations at these exercises.

The graduate students' relationship to surgical pathology does not terminate with this formal introduction, for throughout his entire training he is obliged to study the material which he has seen at the operating table. Ordinarily, no surgical material is sectioned until the surgeon who has removed it has had an opportunity to examine it, and often the surgeon, his first assistant, and the resident assigned to pathology examine the gross specimen together and decide where blocks shall be taken for microscopic examination. After the microscopic sections are completed, they are available for examination by all members of the

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*From the Department of Surgery of the College of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

resident staff for about ten days before they are filed away. During this time, they lie in trays on the microscopic bench in a small room immediately adjacent to the one in which the resident surgeon holds his daily conference with all members of the resident staff. At these conferences, each assistant reports on the condition and progress of all his patients, and at this time, while the clinical picture of the patient is clear in his mind, he has an easy opportunity to see the microscopic sections on that case. Since, ordinarily, he has already had his tour in the pathologic laboratory, he is usually in a position to interpret the microscopic findings for himself. If unable to do so, he must look up the report and diagnosis or discuss the matter with the pathologist who is usually present at the same meeting.

It is also our custom to hold pathologic conferences twice a month, at which time recent interesting cases are presented and discussed. A schedule is prepared in advance. The clinical story is given by the assistant resident in charge of the patient on the ward. The assistant resident on pathology then presents the gross material and projects on a screen the microscopic sections to point out interesting fields. Additional sections with microscopes and lights are available for more detailed study. Staff members are present to discuss any controversial points or add any special experiences.

As he progresses in his rotation to various services and divisions, each assistant resident may again be called on to give some specified time to pathology. For example, the man detailed to the Holmes Hospital is again assigned teaching duties, including at least one lecture, in the course in surgical pathology. The resident detailed to the Children's Hospital is responsible for description and diagnosis of all surgical material from the operating rooms of that institution. The division of neurosurgery maintains a separate laboratory for the special study of tissues from its service, and the assistant resident on that division must see this material with his staff officer.

In these various ways the graduate student in this school has impressed on him the intimate association of the clinical and the pathologic lesion. He is compelled to devote a certain amount of time to the study of surgical pathologic lesions, and he is constantly exposed to material which is made readily available to him.

IV

Weekly Clinical and Research Conferences in the Graduate School of Surgery in the University of Cincinnati*

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In the training of young surgeons, we constantly strive to instill into their minds the importance of arriving at conclusions by scientific analysis, as well as the importance of the careful weighing of evidence obtained through scientific investigation. At every stage of their training in the art and science of modern surgery, our graduate students are encouraged to answer perplexing questions, not alone from textbooks or lecture notes, but by scientific analysis and investigation or by active laboratory experimentation, with the primary object of making the scientific method as fixed and as natural in their future behavior as will be the technical details of any surgical operation.

We believe that this fundamental training should start early in the formal career of a young surgeon. After he has had the basic training in surgical pathology, we think that he is ready to start his work in the Laboratory of Surgical Research. Each graduate student in the surgical school is appointed as Fellow in Charge of the Laboratory for a period of six months. We realize that this period is hardly adequate for the completion of any major research problem, but it has proved adequate for thorough schooling in the basic principles of scientific research, and that is our real object. During these six months the Fellow in Charge of the Laboratory is given full responsibility for the proper functioning of the Laboratory as a division of the Department of Surgery.

The Laboratory of Surgical Research is maintained for all members of the Department of Surgery but the problems of the Fellow in Charge of the Laboratory are considered of greatest importance. The graduate students are encouraged to choose some problem in that field of general surgery which seems to be of special interest to them. If the problem appears to be based on sound observation and good logic, he is encouraged to carry out the necessary laboratory investigation during his time as Fellow in the Laboratory. It has been our experience that the clinical aspects of the problem will, then, continue to hold his interest throughout the rest of his years in the graduate school of surgery. The laboratory studies of the other members of the graduate school are carried out in conjunction with their clinical studies and such work continues to be under the supervision and guidance of a senior member of the Department who is interested in that particular field of surgery.

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*From the Department of Surgery of the College of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

The Director of the Laboratory is a senior member of the Department of Surgery and he serves as a constant advisor, and instructor in methods of surgical research, to all the students in the surgical school. At regular intervals, the graduate students submit their experimental data for critical review, interpretation, and evaluation to the Director of the Laboratory. When these data are sufficiently complete to warrant a preliminary report, the graduate student presents the fruit of his investigation at one of the regular weekly conferences before the staff of the Department of Surgery and all of the members of the graduate school of surgery. Here, critical analysis, corrections and suggestions are made in such a way that the young investigators are stimulated to pursue their problems with added vigor. In this way each graduate student of the surgical school is trained in the art of public speaking and especially in the art of presenting his work in the most effective manner before a critical audience. After the work has been completed and these data are ready to be put into final shape for publication, it becomes the duty of the Director of the Laboratory to check the analysis of these data from every standpoint and then to supervise the preparation of the manuscript and incidentally instill some of the art of medical writing into the neophytes, before the manuscript is rewritten and submitted to the Director of the Department of Surgery for the final approval and recommendations for publication.

We believe that it is of utmost importance to correlate the work in the Laboratory with the work on the surgical wards and in the operating rooms. Each Tuesday afternoon throughout the school year we have a staff conference for the purpose of discussing these problems. The first and third Tuesday afternoons of each month are devoted to the consideration of the follow-up clinic and the clinical problems of the wards and operating rooms; while the second and fourth Tuesday afternoons are devoted to presentations by members of the graduate school of their clinical or experimental problems and data.

During the purely clinical sessions, a complete report of the results of the weekly follow-up clinic is presented and discussed. The follow-up system, which we all believe is of great importance to any scientific department, functions as a division of the Department of Surgery and is intimately connected with the functioning of the nightly meetings of the resident staff of the Department of Surgery. The records for the past five years show an accurate follow-up study of about 70 per cent on all patients treated on the surgical service. Such a follow-up system is absolutely necessary for accurate clinical investigation.

At these meetings, the chief resident surgeon also presents a detailed account of all operations performed during the preceding two weeks. Each death during that period of time is analyzed and all factors which might have contributed to that death are discussed in order to ascertain if every known means of help had been given to the patient at the proper time.

As the graduate student ascends the ladder toward the position of chief resident surgeon, he begins to apply in his routine clinical work, the lessons which he learned about scientific methods in the Laboratory and he soon begins to

analyze scientifically each problem which confronts him. The fundamental training in physiology and pathological-physiology which he gained from his Laboratory work now permits him to understand more thoroughly most of the tissue reactions, from the healing of traumatic wounds to the more complicated phases of physiologic readjustment after extensive operations upon the gastrointestinal tract.

The Music of the Spheres

Is there a music of the spheres,
Or is it but a theory,
To teach us that our meager ears
Hear but in part, and poorly?

Such music's heard by gods alone,
And not by carping critic,
God only knows why this was done,
Should we be antithetic?

Would we be happy could we hear
The music postulated,
Or would it drive us to despair
The day we were created?

Such great unending symphony
To us would be fatiguing,
Until we learn the harmony
And higher plane of living.

Now this celestial radio
We would blot out completely,
Perhaps to find some star alto
Deplore our action deeply.

So if the music of the spheres
Vibrates the air divinely,
'Tis best our evolving ears
Be dumb to it serenely.

And all the senses immature,
That tie us to creation,
Are still imperfect, but we're sure
They're pointed to perfection.

H. A.

V

The Wednesday Morning Surgical Rounds for Graduate Instruction at the University of Cincinnati*

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In trying to give a description of the weekly ward rounds at the Cincinnati General Hospital, I will ask you to picture a fairly comfortable room, rectangular in shape, with tables used as benches down the two long sides. On one side are seated about fifteen surgical residents, their assistants and surgical interns all in white, and on the other side are seated about an equal number of the surgical staff, a few ex-surgical residents now located in our neighborhood, and a few privileged guests, all in their civilian clothes. The surgical staff has represented in its group all the various surgical specialties. Into the center of this room the patients are brought, either ambulatory, on stretchers, or in wheel chairs.

This conference is held each Wednesday morning, from 8.30 until completed, which is usually about 10 o'clock. The starting hour is quite prompt, most of the men are there on time and remain until the completion of the program. It is one of the most democratic, informal gatherings you could imagine, with no prearranged place to sit, except the usual division of the two sides as above described. It is, however, always presided over by the ranking members of the surgical staff, and it is he who nods his head to the chief resident to start each case, and to end the discussion of each case.

As the patient is brought in, the man in charge of the case steps forward and in the most concise, though complete, manner presents the history of the case, with all the salient features—physical examination, laboratory findings, temperature chart, X-ray films, etc., after which he removes the dressings or demonstrates anything which might be of interest to those seated about. He then states that the case was presented either for diagnosis, for advice as to treatment, for suggestions or criticisms of treatment given, or because of its rarity. Occasionally, there will be a group of similar types, such as two or three cases of penetrating wounds of the heart, gunshot wounds, stab wounds, etc., or a group of similar types of aneurysms or tumors, or similar types of infections, i.e., actinomycosis, blastomycosis, trichinosis, etc., though many mornings the cases are quite dissimilar and of varied interest. After the case has been presented, the chief of staff directs that any who wish may examine the patient, ask any questions either of the resident who presented it, of the patient, or of any of the group present, including the staff and housemen. Then, the chief of staff asks the different ones present their opinion of the case or any phase of it. Most of the men are addressed by their first names, and the discussion is not only most informal but

*Read at the Fiftieth Annual Meeting of the Association of American Medical Colleges, held in Cincinnati, Ohio, October 22-25, 1939.

*From the Department of Surgery of the College of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

each man's opinion is listened to attentively. The pathological sections are present for examination under the microscope, and the X-ray films are present in the view boxes ready for examination.

Finally, after this general conference, a consensus of opinion is usually arrived at. While this may not be unanimous, it is always pleasant, and never have I seen any one embarrassed because of his opinion, or because of his dissension from the group. It is not infrequent to hear them refer to similar cases presented a year or more previously, and to give their results. References to the literature are given by the resident who presents the case. Many of the young men spend quite a number of hours in looking up the literature in the library on the day or night before the conference. Others in the group add any information obtained from recent or old references, or tell of some similar case of their own. The cases are, therefore, worked up quite thoroughly, and great benefit is derived by the patient as well as all those attending the conference. Some cases are completed within ten minutes; others may be before the group for twenty minutes or longer. An average of eight or ten cases are presented at each session, and occasionally the same case is returned for follow up in one or more weeks or even months.

At this point I must confess that I am not a surgeon, but only a radiologist who greatly appreciates the privilege extended to him to sit with this group each week. Any opinions expressed are my own impressions of the educational advantages of these weekly conferences.

As I think over a winter's work, the points which impress me as the most valuable are:

1. The careful selection of the type of case presented, so that it is always interesting and instructive, and so that it brings up for discussion some problem of diagnosis or treatment.
2. The painstakingly complete, yet concise and brief manner in which each member of the resident staff learns to present his patient to the group, and to give a comprehensive resumé of the literature pertaining thereto.
3. The great benefit derived by the patient from the free and open discussion of his case by such a well trained and experienced group of surgeons.
4. The opportunity given, not only to the resident staff and interns, but to the surgical staff as well, to have presented to them this great variety of cases with the privilege of helping in their diagnosis, of following the various methods of treatments instituted, and of observing the results. Over a period of years, the large number of rare and unusual cases seen adds considerably to what we term experience, and does much to develop that invaluable quality of a good doctor, known as "judgment."

VI

Follow-up Study of Former Members of the Graduate School of Surgery at the University of Cincinnati*

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My part in this program is in reality a follow-up on the various men who have gone through our school in the last seventeen years. I happen to have known all these men personally and I have written to them or talked with them during the past summer.

From September, 1922, to September, 1939 (17 years), 45 men have been trained in and have left the Graduate School of Surgery. Of this number 16 have occupied the post of resident surgeon and 29 have been assistant resident surgeons.

There have been 16 resident surgeons in the past seventeen years. It has been the purpose of the Surgical Department to train these men to occupy teaching positions in medical schools.

| | | | | |
|--|---|---|-----------------------|---|
| Associate Professor of Surgery | 4 | { | Cornell | 1 |
| | | | California | 1 |
| | | | Cincinnati | 2 |
| Assistant Professor of Surgery | 4 | { | Baylor | 1 |
| | | | Cornell | 1 |
| | | | Cincinnati | 2 |
| Instructor in Surgery | 5 | { | Arkansas | 1 |
| | | | Emory | 1 |
| | | | California | 1 |
| | | | Cincinnati | 2 |
| Not associated with Teaching Institutions, | 3 | { | San Diego, California | 1 |
| | | | Hamilton, Ohio | 2 |

Except in the case of the first two or three resident surgeons, the usual time spent in the Graduate School by the resident surgeons has been from 5 to 6 years (after internship).

Twenty-nine of the 45 men in the Graduate School in the past seventeen years did not attain the position of resident surgeon, but left the school at various times and for various reasons.

Seventeen of these 29 are engaged in teaching as follows:

Associate Professor of Orthopedic Surgery, 2: Rochester, Cincinnati.

*Read at the Fiftieth Annual Meeting of the Association of American Medical Colleges, held in Cincinnati, Ohio, October 23-26, 1939.

*From the Department of Surgery of the College of Medicine, University of Cincinnati, and the Cincinnati General Hospital.

Assistant Professor of Gynecology and Obstetrics, 2: Cornell, Cincinnati.

Assistant Professor of Clinical Surgery, 3: Cornell, 2; Cincinnati, 1 (retired, ill health).

Assistant Professor of Medicine, 1: Pennsylvania.

Instructor in Surgery, 5: Cincinnati.

Assistant in Surgery, 4: Johns Hopkins, 1; Indiana, 1; Cincinnati, 2.

Twelve of the 29 men who left the school without becoming resident surgeons are not connected with a teaching institution.

Practicing Surgeons, 9: Ohio—Troy, West Liberty, Middletown, Akron, 3 years in Graduate School. Alabama, 3 years in Graduate School; Virginia, 4 years in Graduate School; Connecticut, 1 year in Graduate School; Mississippi, 2 years in Graduate School; Oklahoma, 1½ years in Graduate School.

General Practice, 2: Kentucky, 1 year in Graduate School; Louisiana, 1½ years in Graduate School.

County Commissioner, 1: New York, 1½ years in Graduate School.

TABLE 1—GEOGRAPHICAL DISTRIBUTION

| State | Ala. | Ark. | Calif. | Conn. | Ga. | Ky. | La. | Md. |
|----------------|-------|--------|--------|-------|-----|------|------|-----|
| Resident | | 1 | 3 | | 1 | | | |
| Asst. Resident | 1 | | | 2 | | 1 | 1 | 1 |
| State | Miss. | Ohio | Ohio | Other | | | | |
| | | Cinti. | Cities | Okla. | Pa. | N.Y. | Tex. | Va. |
| Resident | | 6 | 2 | | | 2 | 1 | |
| Asst. Resident | 1 | 9 | 4 | 1 | 1 | 5 | | 1 |

SUMMARY

Of 45 men receiving training in the Graduate School in the past seventeen years, 30 are connected with teaching institutions: 6 associate professors; 10 assistant professors; 10 instructors; 4 assistants.

Twelve men are practicing surgery in eight different states; 2 are in general practice; 1 is health commissioner.

In looking over these facts, three, I think, stand out. First, two-thirds of the men who have been trained in this school in the past seventeen years are connected with teaching in some way. Second, whereas it was relatively easy to place the earlier residents in teaching positions, which have led them at the present time to become associate professors or assistant professors of surgery, it has become increasingly difficult to place the more recent graduates. Third, the school has been responsible for placing in various communities in sixteen states well trained surgeons who we hope are going to do much to raise their local standards of surgery.

Graduate Medical Education*

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As the science of medicine is developed, more effective service can be rendered in the treatment of human ills, and, what is of still greater importance, in the prevention of disease. Every individual interested in medicine from the standpoint of medical education, or from the standpoint of the practice of medicine, has the moral responsibility of stimulating medical research.

The term "graduate work" in medicine has been interpreted by many to mean practically nothing but extension work. Graduate work in medicine as announced by some of our better schools contains hardly any suggestion of research work or true graduate effort. There is no attempt to minimize the importance of this form of education to the individual student, but its contribution to the progress of medicine is of very minor importance. Graduate work, as it is ordinarily interpreted by the university, means work that is productive of new knowledge and that attempts to develop the capacity for independent thought.

If any appreciable number of research workers in the field of medicine are to be developed, it is essential that the interest of the student be secured early in his medical training. If the student does not acquire a very definite interest in research before he reaches the clinical years, the fascination of clinical practice, with its financial rewards, seems to be so great as practically to eliminate the possibility of his becoming interested in basic medical investigation.

The scope of the training of the teachers in medicine, their broad interest in research and the methods employed in instruction, all have a very definite relationship to the success or failure in the stimulation of student interest. Instruction in which so-called scientific theories are taught as finalities is fatal to the stimulation of research interest. It is essential that accepted theories should be presented as the best interpretation of our present day knowledge. At the same time, experimental observations, which are not in harmony with such interpretation, should be pointed out and other possible interpretations of the observed facts should be discussed. The student must be impressed with the idea that all our knowledge is in a state of flux and that it is quite possible that a fair percentage of our present day interpretations are false.

The stimulation of research is not accomplished by making a technician out of the student. Some teachers are so deeply buried in their own specialized line of investigation, that they attempt to assign every student work on the instructor's problem. This offers very little opportunity for developing a capacity for inde-

*Read at the Fiftieth Annual Meeting of the Association of American Medical Colleges, held in Cincinnati, Ohio, October 22-25, 1939.

(From the Department of Physiological Chemistry, College of Medicine of the University of Illinois, Chicago, Illinois.)

pendent thought on the part of the student. It is more desirable to permit the student to work on some particular phase in which he has developed a personal interest. If this interest is to be stimulated and developed, the teachers must give considerable thought and time in an attempt to make the student do his own thinking.

At the University of Illinois, for a period of more than ten years, we have been trying the experiment of giving exceptional students an opportunity to substitute graduate work (research work) for a small portion of the regular work of the curriculum, beginning with the second semester of the second year of the medical curriculum. This opportunity is available to those students during the remainder of their medical training provided they maintain high scholastic records in the regular work of the curriculum. During the last five years, the percentage of qualified students who availed themselves of this opportunity ranged from 55 to 100 per cent. Of these students who began graduate work and completed the requirements for the master of science degree at the end of the fourth year, having spent an additional summer quarter in graduate work, the percentage ranged from 0. to 36.0. A number of students in each class registered for graduate work later in the medical curriculum. The percentage of students who registered in graduate work during this five year period ranged from approximately 20 to 30. The percentage of students who completed the requirement for the master of science degree on the basis of the total number of students in their respective classes ranged approximately from 3 to 9. An appreciable number of experimental results obtained by these medical students have been accepted for publication in our best scientific journals.

Graduate work in medicine, in my opinion, can be carried out more successfully under the direction of the graduate school of the university. Such an organization has developed a better critique for selection of the teachers who are permitted to give graduate instruction. It is also better qualified to judge the quality of the research work that has been conducted. Graduate degrees conferred under this system will meet the standard requirements established for the entire university and not in a more-or-less haphazard fashion when conferred by the medical school itself.

Graduate work in medicine ought to be more adequately stimulated by the establishment of research fellowships in the general field of medicine without specific limitations as to the subjects to be investigated, leaving the individual who qualifies for a fellowship, a free choice. These fellowships should carry stipends that are commensurate with the amount of training that is required of the applicant. If the applicant is required to present eight years of training beyond the high school, a stipend of \$1,200 a year is none too large. This would offer those students of medicine, who have acquired the research spirit, an opportunity to go on with their work and make contributions to medical sciences which are so urgently needed for the progress of medicine. These men ought to be encouraged to work toward the doctor of philosophy degree in the particular field of medicine in which they are interested. Such opportunities would provide

much better training for teachers in medicine than have been available in most instances in the past and at the same time would contribute towards the advancement of the science of medicine.

With the establishment of qualifying boards in the specialties, urgent demands are being made on the colleges of medicine for additional training. A careful consideration of the character and content of the courses offered for such advanced training is indicated. Ideals of education are not met if only additional work in technique is offered. It seems to me that here is an excellent opportunity for the introduction of a year of real graduate work (research). If the course of training for the specialties covers a three year period, one year or its equivalent could be most profitably spent in the study of a definite problem in connection with the specialty for which the student wishes to qualify. Each student pursuing this course should be required to make a definite scientific contribution and be able to qualify for the degree of master of science at the end of his course.

Recently, Judge James M. Proctor, in the District Court for the United States in the District of Columbia, ruled that medicine was not a trade, but a profession, and as such was not liable under the Sherman Antitrust Act. Unfortunately, the Judge was only right in part. There is much in the practice of medicine today that puts it in the class of a trade. The most effective way to elevate the practice of medicine is to continually emphasize research and research thought to the student. It is only to the degree that medicine is practiced from the research standpoint that it can be distinguished from a trade.

Further Attempts to Improve Methods of Selecting Medical Students*

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Memphis, Tennessee

At the University of Tennessee, our faculty believes that the premedical scholastic record is the most important single factor in determining whether an applicant will become a successful medical student. We realize that other factors, such as his medical aptitude record, health, age, and financial resources are important also.

In our experience, only a few students make grades in the College of Medicine as high as their premedical grades. Accurate answers to the following questions should be valuable: First, "How much below the premedical level is the medical record likely to be?" and second, "At what level will the student be likely to prove a failure?" To answer these questions we have analyzed the premedical and early medical records of all students admitted to the University of Tennessee College of Medicine from 1928 to 1938, about 1,100 students.

After trying several methods, we concluded that the applicant's average grade on all courses acceptable for premedical credit was the best index of his ability to study medicine successfully. To be acceptable for premedical credit, a course must be given by an approved college of liberal arts as part of its curriculum leading to the bachelor's degree. The course must not be designed primarily for one preparing for a profession or vocation other than medicine and it must not duplicate the subject matter of the medical curriculum. Courses such as physical education and military training are not acceptable.

In calculating the average we utilize the grades on all acceptable courses whether the applicant has taken two or more premedical years. If a course has been repeated, both the first and second grades are included. Courses are "weighted" according to their value in credit hours.

In calculating the medical average, we utilize all grades of the first three quarters or first "year." If a course has been taken twice, both grades are used. While these methods are arbitrary, in part, we believe they are conservative. The medical record of the first year should be dependent largely on the premedical training. The later medical record should depend increasingly on the quality of the early medical training.

Using the methods described above, we have found that the average grade for all medical students for the first three quarters is 6.11 per cent points below their premedical average. We believe this is valuable information. This discrepancy should vary in different medical colleges. In a general way, it reflects

*Read at the Fiftieth Annual Meeting of the Association of American Medical Colleges, held in Cincinnati, Ohio, October 23-25, 1939.

the difference between the scholastic standard of the medical college and the standards of the premedical colleges from which its students are drawn.

In Figure 1 the line AB represents the performance in the first three medical quarters that would be predicted if the medical average coincided exactly with the premedical average. The dots represent the records made by seventy-three students admitted in three quarters of the year 1938-1939. These students

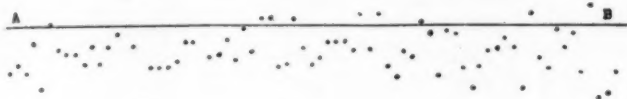


FIGURE 1

remained in attendance at least one quarter or withdrew after failing to make satisfactory progress. It is obvious that, while a few students did better than was anticipated, most of the records are definitely lower than would be predicted.

In Figure 2, the line represents the performance that would be predicted if six points were deducted from the premedical average of each student. The premedical average of this group was 86.5. The predicted medical average was 80.5. The actual performance was 80.1.

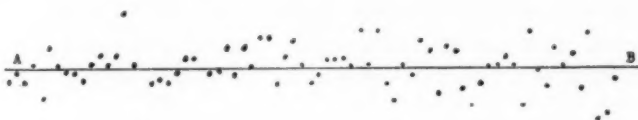


FIGURE 2

While a deduction of six points proves to be an improved method of predicting performance in our medical college, it does not take into account the differing standards of premedical colleges. We have, therefore, attempted to find a correction of this method to be applied to each premedical college. We have assembled a premedical average for all students from a given college and compared this with the medical average of the same students. If the discrepancy is more than six points, we make a proportional deduction from the predicted medical performance. If it is less than six points, we make a proportional addition. This amounts to allowing a "bonus" to applicants from colleges with high standards and imposing a penalty on those from colleges with low standards. We maintain a list of premedical colleges from which those below have been selected.

In Figure 3, the line AB is the predicted performance when six points are deducted from the premedical average and then a correction made for the pre-

medical college. It will be noticed that the dots indicating actual performance approximate the line of prediction somewhat more closely than they do in Figure 2.

It is our policy to select applicants from a definite geographical area rather than to select those only who present the highest premedical record. Under such circumstances, it is important that our minimum entrance requirement shall

| College | Premedical average | Medical average | "Spread" | Bonus or penalty |
|---------|-----------------------|--------------------|----------|---------------------|
| A | 83.12 | 81.94 | 1.18 | +2.5 |
| B | 87.97 | 76.43 | 11.54 | -2.5 |
| C | 85.13 | 76.39 | 8.74 | -1 |
| D | 85.26 | 75.6 | 9.66 | -1.5 |
| E | 82.56 | 76.43 | 6.13 | 0 |
| F | 81.74 | 80.02 | 1.72 | +2.5 |

have inherent validity as discriminating between applicants likely to be successful students and those likely not to be, and not, as it might, be simply the highest level at which our classes could be filled under current conditions.

We have determined that the average grade of all "repeaters" in the first three quarters during the years 1928-1938 was 74. (Our passing grade is 70). We have taken this as the margin between success and failure. On this basis, our minimum requirement should be an average of 80 on the premedical courses. As our faculty had set this standard empirically in 1933, no change was made.

However, as 74 was the average grade of repeaters, some of them must have made higher grades than this. Consequently, we decided arbitrarily that appli-

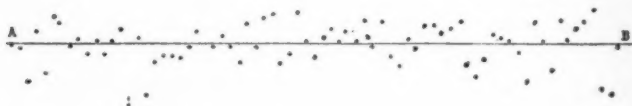


FIGURE 3

cants should not be admitted on averages less than 85 unless there was factual evidence that the applicant was capable of doing better work than his previous record indicated. When the premedical average is between 80 and 85, we decide chiefly on the basis of the applicant's medical aptitude record. In general, if the aptitude rating is above the 50th percentile, we admit the applicant.

With the information now at our disposal, we believe that we can select applicants with less reliance on the general impressions of our admitting officers and with better hope that the applicant will succeed as a student. We expect to reduce further the number of failures and of repeaters.

Undergraduate Medical Instruction in Public Health at the Long Island College of Medicine*

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It has been increasingly apparent that adequate opportunities for the practical teaching of public health to undergraduate medical students and health department personnel were not available in New York City. With this thought in mind, we have the decision of the Health Department to participate officially in a training program which will give medical students and our Health Department personnel the much needed opportunities for training in public health.

The Department of Health, with the deans of the five medical colleges of the City, have set up a cooperative teaching program. In the past this was impossible due to our scattered facilities, so that with the advancement of the district health program and with the erection of the new Health Center buildings in the City of New York these physical difficulties have been removed. Five teaching centers have been established, each located in a different health district, and each associated with one of the five medical schools. The Long Island College of Medicine thus becomes associated with the Red Hook-Gowanus Health and Teaching Center. While the teaching program in its general aspects is more or less uniform, enough latitude is available to fit the individual program to the general needs and policies of each college. In the preparation of the program certain basic objectives were considered.

FIRST: To make available a suitable field of public health in which students may, through observation and participation, learn practical health procedures. To learn to apply this practice from the community standpoint, and to inculcate in the mind of the student the fact that he is to carry with him into private practice the principle that preventive medicine should be made a part of his private practice.

SECOND: To make available further opportunities for the additional training of the Health Department staff. We, in the Red Hook-Gowanus Health and Teaching Center, have made a beginning in the application of these principles.

THE PROGRAM.—The teaching in preventive medicine and community health in the college is begun in the first year and is continued into the clinical years. This emphasizes the integration of the practice of preventive and curative measures. Methods used comprise lectures and cooperative clinics within the Department of Health to impress the students with the preventive and community aspects of disease. The instruction culminates in the senior class with a four week clerkship for each student. The course is given at the Red Hook-

*Read at Annual Meeting of the Public Health Association of New York City, March 22, 1939.

Gowanus Health Center and includes work not only in the Center, but also in the district. This program gives the student practical training in the various community activities which are closely allied to the modern practice of medicine.

The Health Department is being supplemented by the staff of the college from the departments of pediatrics, obstetrics, medicine, tuberculosis, etc. The physicians in charge of each service are responsible for coordinating the teaching program with the staff of the college to such a degree that additional teaching and research duties are being carried on.

The work, briefly, is as follows:

Each student serves an apprenticeship in the tuberculosis, venereal disease and child health clinics. He observes dental hygiene procedure, assists and actually performs smallpox and diphtheria immunizations, and, wherever possible, attends conferences of local physicians and civic organizations. Students take an active part in the school hygiene work of the district. Recently, the school program has been made a direct responsibility of District Health Administration, so that the school work is entirely a local and community project. Students visit the schools, study the interesting cases and are instructed in the objectives of the school program. They are so scheduled that they will meet the school physician and the school nurse. In this way the work is thoroughly organized and has proven very interesting both to the student and to the schools.

It is felt that the student would be more apt to develop a community consciousness and responsibility by tactful observation in the field. Thus, arrangements have been made by which students accompany the diagnosticians and field nurses in making home visits. In this way, they learn to associate the immediate problem at hand with the social and economic background of the family and the community.

Students visit the home with the nurse on tuberculosis, acute contagion, prenatal and child health cases. Before making these visits, they are told of the value of visiting and the reason for going into the home. It is explained that the nurse besides being a teacher is hoping to obtain a picture of the environment and background of the patient to bring back to the doctor. The student has an opportunity to witness the technic used in making a friendly and lasting approach to the patient and how the nurse handles difficult problems.

The student also observes in the school with the doctor and nurse. The nurse gives him a picture of the health work being carried out. She explains the relationship between the Department of Health and the Board of Education for the benefit of the child. The student is taken into the classroom where he has an opportunity first hand to observe health work, both in the individual conference between pupil, teacher and nurse, and the health talk the nurse gives to the entire class.

CONFERENCES.—Provisions are made to acquaint students with the Health Department program as a whole. Visits are made to the diagnostic laboratory,

to the Bureau of Vital Statistics and other services where methods and procedures are studied and observed. Conferences are held with the Health Center personnel, including the Health Officer, from time to time. These discussions are often of a very constructive nature and the students have become interested in the entire program and setup.

Health education is being emphasized in the teaching program and time is devoted to studying methods and procedures. This part of the program has evoked a great deal of interest. The Health District clerkships necessitate the student giving 136 actual hours of time. The time given by the students in the Health Center during the four weeks amounts to 86 hours, so that the greater part of the program is practically carried on in the Health Center building.

After an experience of almost two years, which really has been a period of preliminary observation and study, we believe that the cooperative relationship between the Health Center and the College in the joint teaching program has served to bring closer the college and the Health Department, and has reacted favorably on the general community program. The students themselves have become interested in and have gained a better viewpoint on public health and preventive medicine. Interchange of ideas between the institution of training and the organization responsible for the protection of the public health has undoubtedly tended to make their individual contributions more effective and profitable.

Study of Accomplishment of the 1938 Freshman Class in Seventy-Seven Medical Colleges in the United States and Eight Medical Colleges in the Dominion of Canada

Eleventh Study

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Chicago, Illinois

Since 1928, the Association of American Medical Colleges has made a study of the accomplishment of the members of the freshman class of all medical colleges in the United States. For the past three years eight of the ten medical colleges of Canada have been included in the study. Two of the Canadian colleges have not participated in the study, viz., the University of Montreal and Laval University.

The study is very comprehensive. It concerns not only the accomplishment of the students, but also relates it with the colleges or universities in which these students prepared themselves for the study of medicine and the amount and kind of preparation. It shows, for example, how the student with only two years of college work compares with the students who have had three and four years; how the student with an A.B. degree compares with the student with a B.S. degree and with him who holds more than one degree. The minimum preparation for the study of medicine laid down by the Association of American Medical Colleges is two years of college work with certain prescriptions in chemistry, biology, physics and English. Students are urged to take certain other subjects which it is believed, on the basis of many years of experience, have value in giving a good foundation for the study of medicine. There is no substitute for a good, broad fundamental education. Medicine is still as much of an art as it is a science. It is equally as important for the physician to know man as it is for him to know about his diseases and their treatment. The student must know the fundamentals of chemistry before he enters the medical college because they are not offered in its curriculum. That is also true of physics and biology. But he need not be a chemist, nor a physicist nor a biologist. He should know something about sociology, economics, genetics, psychology, philosophy—because all enter into the practice of medicine. He should be able to reason, to think, because both faculties enter into his practice. He should have culture. He should be able to use the English language in the highest degree. He should have grammar, logic, composition at his fingers' ends. He should know something about literature. If he is a fine classical scholar, he will have an advantage over him who is not. This study brings proof of all of these statements. A mere glance at the figures presented herewith is apt to confuse, but if they are studied in the light of what has been said, they will come to life and give the answer to many questions which often are asked by prospective medical students.

Admission to a medical college is based largely on the applicant's scholarship; second, on how much time he has spent in college; third, on the subjects or

courses taken, on psychological tests, personnel tests, the medical aptitude test. Each year the Association of American Medical Colleges conducts in more than 600 colleges and universities in the United States, Canada, Hawaii, Porto Rico and the Canal Zone the so-called medical aptitude test. Nearly 13,000 students take this test annually. The results are used in determining acceptance or rejection of an applicant for admission to a medical college. A study of the correlation of the test results with accomplishment in medical college is made by the Committee on Medical Aptitude Test.

The study with which this paper is concerned also gives information as to numbers of students, the number of women students, the number of repeaters; how many students fail of promotion; how many have a clear record, subject conditions and failures; how many are compelled to withdraw because of illness or lack of finances, or other reason not connected with failing scholarship. The data presented are accurate. Every one of the cooperating medical colleges reports on each student by name. These reports are checked against the enrollment blanks sent in early in the year. Every medical college in the United States and all but two of the Canadian schools make these reports. Therefore, every medical student is included in the final study.

The Association maintains a Student Register. Every student is represented by a card on which are recorded his name, address, college or colleges attended, degree of preparation, medical college or colleges attended, record of his accomplishment, standing in class by thirds, and, finally, the name and address of the hospital in which he interns. This is an educational not a biographical record. The total number of cards in this file is the total number of medical students for each year.

Each year a report is made to the colleges represented in the freshman class of all the medical colleges on the accomplishment of its students. They report back the students' standing in college. These reports are correlated and the result is published. Thus, the colleges receive valuable information on their students and many of them have used this information to revamp courses, to advise students on what courses they should take to help them in their work in the medical college. Every effort is made to make this study of as much value as is possible, for the college, for the medical college and for the student. It is hoped that eventually the mortality, scholastically, among medical students will be reduced. Until now, the mortality has lessened but little. It is still over 10 per cent for the freshman class and about 20 per cent by the end of the fourth and final year of the medical course.

COLLEGE DATA

The members of the 1938 freshman class came from 547 colleges and universities of the United States and other countries. In 1935, 615 colleges were represented; 587 in 1936 and 572 in 1937. It is not possible, without further specific information on this point, to account for the falling off in numbers of colleges represented. The fact that students are remaining in college longer now than heretofore may be a reason but it would hardly account

for the large difference between 1935 and 1938—68 colleges. The number of applicants for admission to medical schools has not lessened appreciably in the past five or six years. Many colleges are still offering so-called "premedical" courses; their students take the medical aptitude test, but they do not enter medical schools. Is it because of an increasingly strong conviction that the study of medicine is becoming more difficult each year? Hardly! Because the number of applicants remains virtually the same.

Of these 547 colleges, 89 are not approved by a national or regional accrediting agency, but their students are accepted by the university of the state in which the college is located. Acceptance of the students from these colleges by medical schools is permitted by the Association of American Medical Colleges through a special provision of the entrance requirements. In 1937, 108 of the 572 colleges represented by students were in the nonapproved group.

The 89 colleges were represented by 210 students as against 261 students from 108 colleges in 1937, or 3.7 per cent of all freshman students as against 4.5 per cent in 1937. The accomplishment of these students will be discussed later.

ACCOMPLISHMENT OF 1938 FRESHMAN CLASS

The total number of students reported on by all medical colleges at the end of the 1938-1939 session was 5,811. The 1937-1938 class numbered 5,994. The difference between these two classes is 183, or 3.1 per cent less in 1938 than in 1937. Lest those who demand that medical schools accept more students—even beyond their ability to care for them—it must be pointed out at this time that 412 applicants who were accepted by medical schools for the 1938-1939 session did not matriculate. Furthermore, the number of accepted applicants was 52 per cent of all applicants. The 1934 freshman class was the largest for all time—6,683 students.

TABLE 1. ACCOMPLISHMENT OF 1938 FRESHMAN CLASS

| | Own | | Others | | All Students | |
|------------|------|------|--------|------|--------------|------|
| | No. | % | No. | % | No. | % |
| Clear | 1617 | 81.3 | 2771 | 73.6 | 4388 | 72.2 |
| Encumbered | 201 | 10.1 | 547 | 14.5 | 748 | 13.0 |
| Out | 116 | 5.8 | 326 | 8.7 | 442 | 7.7 |
| Withdrew | 66 | 2.8 | 128 | 3.2 | 179 | 3.1 |
| Totals | 2004 | 34.5 | 3807 | 65.5 | 5811 | |

Table 1 presents the accomplishment of the 1938-1939 freshman class. In the group clear are included those students whose record was clear, without conditions of any kind. In the encumbered group are included those students who had subject conditions or failures or who did not complete the work of that year either because of lack of time or because of having failed to take one or more examinations owing to illness or other cause of absenteeism. The "out" group includes all students who failed of promotion—students who must repeat the year, who were dropped without privilege of further registration, or who resigned, voluntarily or otherwise, because of poor or failing scholarship. Among the group with subject conditions or failures are some who later failed to remove these encumbrances and were dropped or failed. Inasmuch as figures on this group are not available at the time this study is made, they cannot be included

in the "out" group. Therefore, the figures on the "out" group are not as large as they should be, but they are what was reported by the colleges at the end of the regular college session or academic year. Then there is the group of students who withdrew on account of illness, lack of finances, dislike for medicine, illness in the family and other reasons. However, in some instances the reason for withdrawal was not stated. The student did not say why he quit. It is likely that inability to do the work required satisfactorily may have been the reason. If that is true, then the "out" group would be larger than is shown in the table. Very few of these students return later to carry on, even the ill and impoverished ones. Which, again, makes it likely that when these reasons were given for withdrawal they were not the real reason. In making our calculations, therefore, the "out" and the "withdrew" group are cited as having failed of promotion.

Each year the number of students with a clear record is increasing. In 1936 it was 71.9 per cent of the class; in 1937, it was 75.4 per cent; in 1938, it was 76.2 per cent. Is this the result of better preparation for the study of medicine? That point will be discussed later. There is also a fluctuation in the percentages for the encumbered group. In 1936, it was 14.9 per cent; in 1937, 12.7 per cent; in 1938, 13.0 per cent. There is a definite lessening of the number of students who fail of promotion. In 1936, 10.0 per cent failed; in 1937, 8.9 per cent; in 1938, 7.7 per cent. Those who withdrew remained fairly constant in numbers; in 1936, 3.2 per cent; in 1937, 2.9 per cent; in 1938, 3.1 per cent. Combining the percentages for the "out" and "withdrew" groups for these years we get: in 1936, 13.2 per cent; in 1937, 11.8 per cent; in 1938, 10.8 per cent. Here, too, better preparation for the study of medicine may have been a factor or more students attend colleges better prepared to get them ready for medicine. This is probably true as is shown in another study made by the Association of American Medical Colleges in which the accomplishment of the students in all colleges represented in the student body is shown.

ACCOMPLISHMENT OF "OWN" AND "OTHER" STUDENTS

The designations "own" and "other" students are used to indicate those students who attend the medical college which is a part of the university in which they prepared for the study of medicine and those who attend some other medical college a part of some other university. Naturally, a good selection of students can be made by a medical college from the students who attended its own university. Not only are all the records available but the students are well known to all their instructors and these can easily be consulted as to the aptitude of students for medicine. Therefore, the accomplishment of this group should be better than that of the "other" group. That this is true is also shown in table 1 in which the accomplishment of the two groups is shown separately.

The "own" group was not as large in 1938 as in 1937—34.5 per cent as against 39.0 per cent. Per contra, the "other" group was larger—65.5 per cent as against 61.0 per cent.

The accomplishment of these two groups is significant of good selection.

More "own" students had a clear record than "other" students—81 per cent as against 73.6 per cent. Of the "own" students, 10.1 per cent had encumbered records as against 14.5 per cent of the "other" students. Only 5.8 per cent of the "own" students failed of promotion as against 8.7 per cent of "other" students. The withdrawals were: 2.8 per cent for "own" and 3.1 per cent for "other" students. Combining these last two items, we find that 8.6 per cent of "own" students were out of the class at the end of the year as against 11.9 per cent of "other" students. Of course, the medical school took the best of its own students and those not accepted had to find a place in some other medical school. Nevertheless, no medical school can be asked to accept more of its own university students than it does because it would mean a lowering of standards. It is definitely the problem of the individual student. The medical school does not limit the number of own students which it will accept. It only limits the total number.

TABLE 2. PREPARATION OF STUDENTS FOR STUDY OF MEDICINE

| | Own | | Others | | All Students | |
|----------------|------|------|--------|------|--------------|------|
| | No. | % | No. | % | No. | % |
| 2-3 years | 124 | 5.7 | 124 | 3.5 | 248 | 4.4 |
| 3-4 years | 982 | 49.0 | 719 | 18.8 | 1701 | 29.2 |
| 4 or more yrs. | 144 | 7.2 | 183 | 4.8 | 327 | 5.6 |
| A.B. | 487 | 24.3 | 1545 | 40.3 | 2022 | 34.8 |
| B.S. | 267 | 13.3 | 1236 | 32.4 | 1503 | 26.0 |
| Totals | 2004 | 34.5 | 3807 | 65.5 | 5811 | |

PREPARATION OF THE 1938 FRESHMAN CLASS

How much preparation for the study of medicine is needed? This question is discussed always but not very often as it should be. After all, innate ability must be the determining factor. Some students could begin the study of medicine after leaving high school. Others would not be ready even after a long residence in college. Some medical schools still keep the minimum requirement for admission—two years of college work with subject prescription. Most medical schools require three years of college work. Four or five accept only holders of a bachelor's degree. Unfortunately, the aptitude of the student, his mentality, his personality, and, above all, his scholarship are not always the criteria on which his acceptance is based. True, it is difficult, probably impossible, to make a selection which will be justified by the result. An A-1 student in college may turn out to be a perfect failure in medical school and vice versa. New aids for selection are devised continually, certain evidence that the perfect method has not yet been found. Some medical schools are fortunate in that they attract only good scholars for admission. Some must select from the gleanings. However, an examination of table 3 shows that the length of preparation is not the most important factor in determining what a student will do in medical school.

It is true that students who intend to enter medical school are spending more time in getting prepared for medicine. Perhaps they feel that more preparation will give greater assurance of being accepted by a medical school. But that is not true. Another study made by the Association of American Medical Colleges shows definitely that students with longer preparation are not favored over those

with less. Again, the item of scholarship is stressed. Nevertheless, each year the number of students with the least acceptable preparation is growing smaller. And, each year, the number of students coming with a bachelor's degree is growing larger.

Thus, in 1938, only 4.4 per cent of the freshman class had less than three years of college work. And many of these had more than two years (60 hours) of college work. Summer sessions are becoming very popular and with good reason. They give opportunity to do what time will not permit during a regular session. In 1937, 6.5 per cent of the freshman class had less than three years of college work. In 1937, 55.8 per cent of the class had a bachelor's degree or better as against 60.8 per cent in 1938. Representing the group with three or more years (but less than four years) of preparation, were 32.2 per cent in 1937 and 29.2 per cent in 1938. Then there is a small group of students who remain in college for four or more years—some as long as ten years—but who do not receive a degree, probably students who are more interested in doing what they want to do than in taking prescribed courses which lead to a degree. In 1937, the percentage for this group was 5.4; in 1938, it was 5.6 per cent. In 1937, then, the degreeless students numbered 44.2 per cent, in 1938, 39.2 per cent. The degree holding students; in 1937, 55.8 per cent; in 1938, 60.8 per cent.

Here, again, we find that medical schools are more willing to take a chance with a student having less preparation who comes from their own university than with one who comes from another university, and with good reason. They know all about him. He has been with them so long, in close association with many of the teaching personnel from whom information can be secured easily. Of the "own" students with less than three years of preparation there were 5.7 per cent; of the "others" 3.5 per cent. Apparently the "other" students with longer preparation had little difficulty in being admitted, provided their scholarship was acceptable. Of the students with three to four years of preparation, 49.0 per cent were "own" and 18.8 per cent were "others." Of the four or more years group, 7.2 per cent were "own" and 4.8 per cent "others." In the three years group were many students who were accepted only on the assurance that they would receive the bachelor's degree from their college or university after the satisfactory completion of the first year of medicine. Therefore, the percentages given favor that group especially among the "own" students. In the degree holding group, the percentages are very different. In the "own" group we find: A.B., 24.3 per cent; B.S., 13.3 per cent. In the "others" group: A.B., 40.3 per cent; B.S., 32.4 per cent.

In 1937, these percentages were as follows: "Own:" 2 to 3 years, 8.9 per cent; three to four years, 49.2 per cent; four or more years, 6.9 per cent; A.B., 22.2 per cent; B.S., 12.7 per cent. "Others:" two to three years, 4.8 per cent; three to four years, 21.2 per cent; four or more years, 4.7 per cent; A.B., 38.7 per cent; B.S., 30.6 per cent.

In line with the discussion of how much preparation the prospective medical student should have, is the accomplishment of the various groups of students. Table 3 gives this information. For each group are shown the record of

accomplishment in detail. The two to three years group: In all brackets, this group makes a good showing. It is second in greatest number of clear records being exceeded only by the three to four years group. It is also second in least number of encumbered records, in the failed group but shows the greatest number of withdrawals although only a few fractions of one per cent behind the three to four years, the A.B. and the B.S. groups. This is a very creditable record, one which proves how carefully the members of this group were chosen by the medical schools and how well the choice was justified by the result. The three to four years group made the best showing in the number of clear records, had the fewest encumbered records and the fewest failures but stood fourth in the number of withdrawals. This group makes the best showing of all groups. The four or more years group makes the poorest showing of all groups, although only slightly more so than the B.S. group, strange as that may seem. It had the least clear records, the most encumbrances and out and out failures but by far the fewest withdrawals.

TABLE 3. CORRELATION OF ACCOMPLISHMENT WITH PREPARATION

| Preparation | Clear | | Encumbered | | Out | | Withdrawn | | Total |
|----------------|-------|------|------------|------|-----|------|-----------|-----|-------|
| | No. | % | No. | % | No. | % | No. | % | |
| 2-3 years | 192 | 77.4 | 30 | 12.1 | 17 | 6.9 | 9 | 3.6 | 248 |
| 3-4 years | 1329 | 78.6 | 194 | 11.5 | 115 | 6.8 | 51 | 3.0 | 1689 |
| 4 or more yrs. | 225 | 69.0 | 59 | 18.1 | 38 | 11.6 | 4 | 1.2 | 326 |
| A.B. | 1522 | 76.1 | 270 | 13.5 | 140 | 7.0 | 68 | 3.4 | 2000 |
| B.S. | 1120 | 74.5 | 194 | 13.0 | 132 | 8.7 | 47 | 3.2 | 1503 |
| Totals | 4388 | 76.2 | 747 | 13.0 | 442 | 7.7 | 179 | 2.8 | *5764 |

*Does not include 55 students at Yale who are not graded until the end of the sophomore year.
No degree: 59.2% Degree: 60.8%

CORRELATION OF ACCOMPLISHMENT AND PREPARATION

The accomplishment of the degree holding groups, B.S. and A.B., is somewhat astonishing. The A.B. group ranked third in the number of clear records; fourth in the number of encumbered records; third in the number of failures and second in the number of withdrawals. The B.S. group stood fourth in the number of clear records; third in the number of encumbered records; second in the number of failures and third in the number of withdrawals. Thus, it cannot be said that the greatest amount of preparation, so far as years spent in college are concerned, leads to the best records. Perhaps, those students with lesser preparation are hard workers or they know that they must work hard to make good, and the degree holders have a superiority complex, are overcertain of their ability, work less hard and, therefore, fall behind. Of course, the change from college to medical school is rather an abrupt and weighty one. Some students fail to realize this in their first year in medical school and lag behind the others who are impressed with the need for hard work. Do they get into their stride in the remaining three years? Do the others eventually fall behind? These questions cannot be answered because no study has been made of these results. Such a study is projected. When it is made, these questions can be answered. It will be an interesting study.

In 1937, the results for the clear records were the same. The various groups occupied the same positions as in 1938. For the encumbered records, the three

and four years groups occupied the same positions as in 1938, but the position of the other three groups was different. The A.B. group occupied second place, the two year group third place and the B.S. group fourth place. The B.S. group had the greatest number of failures; then came the four years group, the three years group came third, the A.B. group fourth and the two years group had the fewest failures. There was a considerable reversal in the withdrawal group. The four years group had the greatest number; then came the B.S. group. The A.B. group, the three years group and the two years group had the fewest withdrawals.

Taken as a whole, it would seem that the B.S. group makes the poorest showing in nearly all brackets. This has been the case every year that this study has been made. It would be most interesting to make a comparative study of the courses which lead to these two degrees in all colleges, especially those which send students to medical schools each year. Of the colleges sending students about three fourths are represented every year. Among the remaining one fourth there is considerable change from year to year. A college may appear one year and not the next or not again for several years. Some colleges make a poor showing year after year. It is planned to make a study of this item in the near future as it is believed that the information gleaned therefrom will be of value to the colleges.

TABLE 4. ACCOMPLISHMENT OF STUDENTS WITH MULTIPLE DEGREES

| Preparation | Clear | | Encumbered | | Out | | Withdrew | | Total |
|-------------------|-------|-------|------------|-------|-----|------|----------|------|-------|
| | No. | % | No. | % | No. | % | No. | % | |
| A.B., A.M. | 38 | 82.6 | 3 | 6.5 | 5 | 10.9 | | | 46 |
| A.B., M.S. | 12 | 75.0 | 3 | 18.7 | | | 1 | 6.3 | 16 |
| A.B., B.S., M.S. | 1 | 100.0 | | | | | | | 1 |
| A.B., A.M., Ph.D. | 5 | 100.0 | | | | | | | 5 |
| A.B., M.S., Ph.D. | 1 | 100.0 | | | | | | | 1 |
| B.S., M.S. | 28 | 89.0 | 1 | 2.9 | 2 | 5.7 | 4 | 11.4 | 35 |
| B.S., A.B. | 13 | 76.5 | 1 | 5.8 | 3 | 17.6 | | | 17 |
| B.S., A.M. | 6 | 100.0 | | | | | | | 6 |
| B.S., M.S., Ph.D. | | | 1 | 100.0 | | | | | 1 |
| B.S., A.M., Ph.D. | 2 | 100.0 | | | | | | | 2 |
| Totals (130) | 106 | 81.5 | 9 | 6.9 | 10 | 7.7 | 5 | 3.8 | 130 |

MULTIPLE DEGREES

In the 1938 freshman class were 130 students who held more than one degree, as shown in table 4. It is interesting to note the accomplishment of these students. Except for the A.B., M.S., students, of whom there were 16, all did better than the average for the entire class on clear records, but none of this group failed, not counting the one student who withdrew (reason not stated). The B.S., A.B. group (7 students) did a little better (76.5 per cent) on clear records than the class as a whole (76.2 per cent). But three men in this group failed, a percentage of 17.6 as against 7.7 per cent for the entire class. The remaining groups in this category did very well on clear records, from 80 to 100 per cent. Of the nine Ph.Ds., eight came through clear; one had a condition.

It can be assumed, then, that these students had an advantage over the others, or their greater maturity may have been a factor. Wisdom comes with age and judgment and reasoning power are enhanced. It would be interesting to know whether these men intend to practice or to go into teaching and research.

"OWN" AND "OTHER" STUDENTS

Table 5 presents the accomplishment of "own" and "other" students. As is to be expected, for the reasons given in the beginning of this report, the "own" students did considerably better in all brackets than the "other" students. More of them had clear records, fewer encumbrances, failures and withdrawals. It is interesting that the less than three years of college work "own" students lead in the percentage of clear records by a considerable margin and also had the lowest percentage of failures and encumbered records. The opposite is true of this group among the "other" students. This must be accepted as conclusive evidence of better selection of students from this group from among those who attended the university of which the medical college was a part. These students were known; their personality as well as their scholarship. Among the "other" students, those with four or more years of preparation led in the number of clear records but had the second largest percentage of failures, being exceeded by the two years group.

TABLE 5. PREPARATION AND ACCOMPLISHMENT OF "OWN" AND "OTHER" STUDENTS

| | Own | | | | | Others | | | | |
|----------|----------------|-------------------|--------------|------------------|--|----------------|-------------------|--------------|------------------|--|
| | Clear No. % | Encumb'd No. % | Out No. % | Withdr. No. % | | Clear No. % | Encumb'd No. % | Out No. % | Withdr. No. % | |
| 2-3 yrs. | 109 87.8 | 5 4.0 | 4 3.2 | 6 4.9 | | 83 66.9 | 25 20.0 | 13 10.5 | 3 2.4 | |
| 3-4 yrs. | 820 83.8 | 76 7.8 | 54 5.5 | 28 2.8 | | 509 71.5 | 118 16.5 | 61 8.5 | 23 3.2 | |
| 4 yrs. | 94 65.3 | 29 20.1 | 19 13.2 | 2 1.4 | | 143 78.1 | 19 10.4 | 19 10.4 | 2 1.1 | |
| A.B. | 384 80.3 | 87 11.9 | 23 4.8 | 14 2.9 | | 1138 74.7 | 213 14.0 | 117 7.7 | 54 3.6 | |
| B.S. | 210 79.2 | 33 12.4 | 16 6.0 | 6 2.3 | | 910 74.1 | 161 13.1 | 116 9.5 | 41 3.3 | |
| Totals | 1617 79.3 | 200 11.2 | 116 6.5 | 56 2.8 | | 2783 73.1 | 536 14.8 | 326 9.3 | 123 2.7 | |

Among the "own" students, the degree men were outstripped in number of clear records by the two and the three years groups. The reverse was true among the "other" students, except for the four or more years group. The accomplishment of the A.B. and B.S. students is also interesting. It must be remembered that on the basis of preparation for medicine the class is divided into five groups, three nondegree groups and two degree groups. And, there are the "own" and the "other" groups. Considering the "own" group first, we find that the non-degree students had more clear records than the degree holding students (the four or more years group is not included here). The A.B. students did a bit better than the B.S. students. When it comes to out and out failures (again not including the four or more years group) the B.S. students had the largest percentage of failures, the three to four years students stood second, the A.B. students third and the two to three years group fourth; i.e., it had the fewest failures. As to encumbered records (subject conditions and failures) the B.S. group has the largest percentage, then comes the A.B. group; third the three to four years group and the two to three years group had the fewest encumbered records.

As for the "other" student groups: The degree men have the best of it as to clear records and encumbered records. The A.B. men lead; the B.S. men are second; the three to four years group third and the two to three years group fourth in clear records. There is somewhat of a reversal in encumbered records.

The two to three year men had the largest percentage; then come the three to four year men; third, the A.B. men and fourth the B.S. men; they had the fewest encumbered records (not including the four year men). As to percentages of failed students, the order, beginning with the greatest number of failures, was as follows: First, two years group; second, B.S. group; third, three years group and fourth, A.B. group (least failures).

These figures show that it is easier to select students of the own university than from other universities on whom information is derived only from written reports.

TABLE 6. CORRELATION OF PREPARATION AND ACCOMPLISHMENT OF WOMEN STUDENTS

| Preparation | Clear | | Encumbered | | Out | | Withdrawn | |
|----------------|-------|------|------------|------|-----|------|-----------|------|
| | No. | % | No. | % | No. | % | No. | % |
| 2-3 years | 6 | 75.0 | 1 | 12.5 | | | 1 | 12.5 |
| 3-4 years | 49 | 78.1 | 13 | 19.4 | 5 | 7.5 | | |
| 4 or more yrs. | 8 | 57.1 | 3 | 21.4 | 3 | 21.4 | | |
| A.B. | 108 | 76.6 | 22 | 15.6 | 7 | 5.0 | 4 | 2.8 |
| B.S. | 47 | 69.1 | 7 | 10.3 | 13 | 19.1 | 1 | 1.4 |
| Totals (298) | 218 | 73.1 | 46 | 15.4 | 28 | 9.4 | 6 | 2.1 |

Clear: Upper third, 74; middle third, 96; lower third, 48

THE WOMEN STUDENTS

Table 6 presents the preparation and accomplishment of the women freshmen. There were 298 women in the 1938 class as against 338 in the 1937 class. Only 52.0 per cent had a bachelor's degree as against 60.8 per cent for the entire class. Their accomplishment did not equal that of the men as shown in table 7. Except for 32 of the women who attended the Woman's Medical College of Pennsylvania, the remainder attended coeducational colleges, therefore these were on an equal footing with the men so far as courses taken are concerned.

TABLE 7. COMPARISON OF ACCOMPLISHMENT OF MEN AND WOMEN STUDENTS

| | Clear | | Encumbered | | Out | | Withdrawn | |
|-------|-------|------|------------|------|-----|-----|-----------|-----|
| | No. | % | No. | % | No. | % | No. | % |
| Men | 4170 | 76.4 | 702 | 12.8 | 414 | 7.5 | 178 | 3.2 |
| Women | 218 | 73.1 | 46 | 15.4 | 28 | 9.4 | 6 | 2.1 |

The A.B. group had the largest number of clear records; the B.S. group had the smallest number, excepting the four or more years group which in its accomplishment stands as it did for the class as a whole. The two years group stood second; the three to four years group third and the B.S. group fourth. For the encumbered group, the B.S. group had the fewest encumbered records; the two years group came next; then the A.B. group and last the three to four years group. The two years group did not have any failed students; the four or more years group had the most failures; next came the B.S. group; then the three to four years group. The A.B. group had by far the fewest failed students, 5.0 per cent as against 7.0 per cent for the entire class. However, for total failures, the women had 9.4 per cent as against 7.5 per cent for the men.

In 1937, there were 1,109 women students in the four years. In 1938, there were 1,078. The number in each class was as follows: Freshmen, 298; sophomore, 282; junior, 260; senior, 238. The degree of M.D. was bestowed on 224

women. That does not mean that 14 women failed to graduate. Thirteen medical colleges require an internship for graduation. The seniors in these colleges do not receive the M.D. degree until after the internship has been served. Therefore, an apparent disparity between seniors and graduates always exists. That is true not only for the women but for the men as well. At the end of the 1937-1938 academic year, 253 women received the M.D. degree.

TABLE 8. PREPARATION AND ACCOMPLISHMENT OF STUDENTS FROM NONAPPROVED COLLEGES

| Preparation | Clear | | Encumbered | | Out | | Withdrawn | | Died | | Totals | |
|-------------|-------|------|------------|------|-----|------|-----------|-----|------|-----|--------|------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| 2-3 yrs. | 15 | 60.0 | 11 | 32.0 | 1 | 4.0 | | | 1 | 4.0 | 25 | 11.9 |
| 3-4 yrs. | 28 | 73.7 | 2 | 5.3 | 8 | 21.0 | | | | | 38 | 18.1 |
| 4 yrs. | 6 | 75.0 | 1 | 12.5 | 1 | 12.5 | | | | | 8 | 3.8 |
| A.B. | 45 | 64.3 | 14 | 20.0 | 9 | 12.8 | 2 | 2.9 | | | 70 | 33.3 |
| B.S. | 51 | 73.9 | 4 | 5.8 | 12 | 17.4 | 2 | 2.9 | | | 69 | 32.8 |
| Totals | 145 | 69.1 | 29 | 13.1 | 31 | 14.8 | 4 | 1.9 | 1 | 0.5 | 210 | |

STUDENTS FROM NONAPPROVED COLLEGES

In the 1938-1939 freshman class, 210 students from nonapproved colleges were in attendance, as against 261 students in the preceding year. Table 8 presents the length of preparation and the accomplishment of this group of students. Twenty-five of these students had less than three years of college work. They did not do very well. They had by far the smallest percentage of clear records, the most encumbered records but the fewest failures, two-thirds less than the A.B. group—which is a record. Even so, they are a definite hazard. There are many variations from the averages of the class as a whole. The failures in each of these groups is significant, although the percentage of clear records is better than that of the class as a whole. The record for this group was better in 1938 than it was in 1937—with more clear records and fewer failures. Doubtless, selections from this group should be made with care and caution.

TABLE 9. ACCOMPLISHMENT AND PREPARATION OF REPEATERS

| Preparation | Clear | | Encumbered | | Out | | Withdrawn | |
|----------------|-------|------|------------|------|-----|------|-----------|-----|
| | No. | % | No. | % | No. | % | No. | % |
| 2-3 years | 12 | 57.1 | 5 | 23.8 | 3 | 14.3 | 1 | 4.9 |
| 3-4 years | 49 | 69.0 | 8 | 11.1 | 13 | 18.3 | 1 | 1.4 |
| 4 or more yrs. | 7 | 87.5 | 1 | 12.5 | | | | |
| A.B. | 54 | 75.0 | 11 | 15.2 | 6 | 8.3 | 1 | 1.4 |
| B.S. | 34 | 79.0 | 6 | 13.9 | 3 | 7.0 | | |
| Totals (215) | 156 | 72.3 | 31 | 14.5 | 25 | 11.7 | 3 | 1.4 |

Clear: Upper third, 45; middle third, 47; Lower third, 64

REPEATERS

There were more repeaters in 1938 than in 1937—215 as against 198. (In the sophomore class there were 79 repeaters; junior class, 13; senior class, 15.) Their accomplishment was much better than of a like group the preceding year, especially of those students who had a bachelor's degree. The others did not do so well. Table 9 shows many different results than appear in the tables showing the accomplishment of the class as a whole. Perhaps, some, if not all, of the variables could be explained if one were to consider the colleges in which these students prepared for medicine. At any rate, the results can be taken as an

indication that there is a tendency to give permission to repeat with more reluctance than formerly. Repeaters are finding it more difficult to gain admission either in their own or some other medical college.

TABLE 10. THE CLEAR RECORDS BY THIRDS OF STUDENTS WHO TOOK THE MEDICAL APTITUDE TEST

| Test Percentile | Upper | | Clear Middle | | Lower | |
|-----------------|-------|------|--------------|------|-------|------|
| | No. | % | No. | % | No. | % |
| 1-10 | 29 | 18.1 | 78 | 48.4 | 54 | 33.5 |
| 11-20 | 51 | 23.3 | 110 | 50.2 | 58 | 26.5 |
| 21-30 | 85 | 25.2 | 172 | 51.0 | 80 | 23.8 |
| 31-40 | 109 | 29.5 | 162 | 43.8 | 99 | 26.7 |
| 41-50 | 143 | 35.2 | 164 | 40.1 | 102 | 24.7 |
| 51-60 | 161 | 37.0 | 179 | 41.0 | 96 | 22.0 |
| 61-70 | 189 | 37.7 | 201 | 40.1 | 110 | 22.2 |
| 71-80 | 194 | 40.4 | 201 | 41.6 | 85 | 18.0 |
| 81-90 | 280 | 51.8 | 169 | 31.3 | 91 | 14.9 |
| 91-100 | 304 | 59.1 | 153 | 29.8 | 57 | 11.1 |

CORRELATION OF ACCOMPLISHMENT WITH APTITUDE TEST

Table 10 represents a correlation of accomplishment with the aptitude test results according to standing in class by thirds. In the upper two deciles the correlation is very good; in the next three upper deciles it is good. In the five lower deciles it is probably what can be expected.

TABLE 11. ACCOMPLISHMENT OF STUDENTS WHO TOOK THE MEDICAL APTITUDE TEST ACCORDING TO TEST PERCENTILES

| Test Percentile | Clear | | Encumbered | Out | | Withdrawn | Totals |
|-----------------|-------|------|------------|-----|------|-----------|--------|
| | No. | % | | No. | % | | |
| 1-10 | 161 | 51.6 | 75 | 65 | 20.8 | 11 | 312 |
| 11-20 | 219 | 59.0 | 75 | 54 | 14.5 | 23 | 371 |
| 21-30 | 337 | 75.2 | 59 | 41 | 9.1 | 11 | 448 |
| 31-40 | 370 | 72.0 | 83 | 45 | 8.8 | 14 | 512 |
| 41-50 | 409 | 75.0 | 84 | 40 | 7.3 | 12 | 545 |
| 51-60 | 436 | 77.4 | 76 | 40 | 7.1 | 11 | 563 |
| 61-70 | 500 | 83.7 | 55 | 31 | 5.2 | 11 | 597 |
| 71-80 | 480 | 82.5 | 61 | 24 | 4.1 | 17 | 582 |
| 81-90 | 540 | 84.5 | 50 | 30 | 4.7 | 19 | 639 |
| 91-100 | 514 | 90.0 | 35 | 13 | 2.3 | 9 | 571 |

Table 11, on the other hand, gives an almost perfect correlation. These two tables are based on the percentiles given in the report on the aptitude test prepared by the Committee on Aptitude Test. The perfections made in the test from year to year and a better understanding of the purposes of the test by students gives better scores—scores which are significant and which can be used as a measure of the students' aptitude. Table 11 seems to confirm these facts.

TABLE 12. ACCOMPLISHMENT OF SOPHOMORES, JUNIORS AND SENIORS

| Class | Total | Clear | Encumbered | Out | Withdrawn |
|-----------|-------|-------|------------|------|-----------|
| Sophomore | 5194 | 80.4% | 15.4% | 3.2% | 1.0% |
| Junior | 4953 | 85.7% | 13.2% | 0.5% | 0.5% |
| Seniors | 5089 | 93.4% | 0.7% | 0.4% | 0.5% |

ACCOMPLISHMENT OF SOPHOMORES, JUNIORS AND SENIORS

Data on the accomplishment of sophomores, juniors and seniors are presented in table 12. The figures speak for themselves.

In table 13 are presented figures which show how many of those who matriculate as freshmen remain in college. It must be remembered that not all members of the four classes matriculated in the same year. Elsewhere attention has been called to the fact that some students graduate as long as ten years after their original matriculation as freshmen. It has been shown that repeaters also add to

TABLE 13. DATA ON MATRICULANTS WHO CONTINUE THEIR STUDIES

| Year | Freshmen | Sophomores | Juniors | Seniors |
|------|----------|------------|---------|---------|
| 1935 | 6352 | 86.4% | 81.1% | 80.1% |
| 1936 | 6072 | 89.7% | 82.3% | |
| 1937 | 5994 | 86.6% | | |
| 1938 | 5811 | | | |

the original number of students in each class. Breaking down these figures, the number of graduates among regular attendants, students who go through the four years without interruption, is not greater than 75 per cent. The increment is accounted for by those students who have dropped out for a year or more and by the repeaters. The number of graduates in 1939 was 5,084 which includes all those who received the degree of M.D. at any time in that year. Some of these graduates completed the four academic years in three calendar years; some entered in 1935; some entered in previous years. Data on graduates will be given when a complete check has been made. They will show how long a time has intervened between original matriculation and eventual graduation.

TABLE 14. ACCOMPLISHMENT OF STUDENTS IN EIGHT MEDICAL SCHOOLS OF CANADA

| | First Year | | Second Year | | Third Year | | Fourth Year | | Fifth Year | | Sixth Year | |
|------------|------------|------|-------------|------|------------|------|-------------|------|------------|------|------------|------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Clear | 102 | 54.8 | 255 | 71.8 | 325 | 71.7 | 348 | 75.5 | 373 | 84.8 | 395 | 91.4 |
| Conditions | 28 | 15.1 | 54 | 15.2 | 86 | 19.0 | 95 | 20.8 | 61 | 13.9 | 29 | 6.7 |
| Failed | 53 | 28.5 | 41 | 11.5 | 39 | 8.6 | 12 | 2.6 | 4 | 0.9 | 7 | 1.6 |
| Withdrew | 3 | 1.6 | 5 | 1.4 | 3 | 0.6 | 5 | 1.1 | 2 | 0.4 | 1 | 0.3 |
| Totals | 186 | | 355 | | 453 | | 461 | | 440 | | 432 | 2327 |

DATA ON MEDICAL SCHOOLS OF CANADA

Table 14 presents data on the accomplishment of the students in eight of the ten medical colleges of Canada (two not reporting). In some of these colleges the medical course extends over six years, being a combination of the arts and the medical courses. The figures given are, on the whole, comparable with those given for students in the medical colleges of the United States. Apparently, considerable weeding out is done in the first two years of the six years courses, especially in the first year. The total number of medical students in 1938 was 2,327. The total number of graduates for 1939 was 472 in all of the nine four year medical colleges of Canada. Eighteen students failed to graduate because of poor scholarship; 21 had subject conditions and failures which must be removed before the requirements for graduation can be completed. If this is done, the total number of graduates will be 493 as against 572 in 1938.

I am very grateful to all those who have cooperated so well to make this study possible.

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Admission Requirements to Medical Colleges

The arts colleges have found it difficult and confusing to advise their students wisely as to the subject credits they will need when they make application for admission to a medical college. While, in the main, all medical colleges base their requirements on the minimum laid down by the Association of American Medical Colleges, some colleges have added subject requirements which, if met by the applicant, make it difficult for him to take a course which will fit him best for subsequent study in a medical college. Furthermore, there is much variance of opinion among admitting officers of medical colleges as to what constitutes the best preparation for medicine.

The Advisory Council on Medical Education has made this subject a matter of careful thought. The results of its deliberations have been passed on to the Executive Council of the Association of American Medical Colleges. They conform to what medical educators, in general, believe to be sound preparation for medical study. Therefore, the Executive Council now recommends that all medical colleges adopt uniform entrance requirements and drop multiple specifications, especially in the sciences, and reduce them to the fundamentals of physics, biology and chemistry. This is not to be regarded as being an attempt at regimentation nor a setting up of rigid standards, to which the Association always has been opposed. It is merely intended to promote better preparation of students who are planning to enter medical college.

The Executive Council also urges medical colleges not to encourage students to take courses in the college which are a part of the medical curriculum

and to stress the need of securing as broad a general education as possible. As one arts college professor aptly put it, "it is the function of the arts college to turn out educated gentlemen who are prepared to enter on a course of special study in any field with the best possible results for the student." Everywhere one hears of students being "trained." The term hardly can be regarded as being synonymous with "educated." It refers to action rather than to thought and thinking. The performing bear is "trained." Surely, no one wants a prospective medical student to fall into that category. He should be able to think, to reason. Only a good sound education can equip him to do that. Therefore, the recommendations of the Executive Council are very timely.

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Educational Standard for the Internship

Pursuant to a plan of action with which the Executive Council of the Association of American Medical Colleges is now concerned, one which has been authorized by the Association, it will recommend to the Association at its next annual meeting, to be held in Ann Arbor, Michigan, October 28, 29 and 30, 1940, cooperation with national medical and hospital associations in the formulation of a minimum educational standard for the internship, and approval of the requirement of an internship for licensure by all state medical licensing boards.

While hospitals have been approved for internships on the basis of possessing adequate facilities for providing interns with the opportunity to continue their studies, there has not been a concerted, purposeful effort to prescribe a program or curriculum for the internship. The Association of American Medical Col-

leges will be urged to set up a minimum educational program, on a university level, one which will serve as a basis for recommending internships to prospective candidates for these positions. Encouragement to do this has been received from many sources. What the procedure to be employed to bring this about will be, remains to be seen after the meeting of the Association in Ann Arbor, provided that it will endorse the idea and accept the recommendation of the Executive Council.

Internship for Licensure in Canada

At a recent meeting of the Canadian Hospital Council it was resolved "that in the opinion of the Canadian Hospital Council the time has now arrived when it should be made obligatory for a medical student to spend one full year as graduate or undergraduate intern in a recognized hospital before being permitted by the licensing body of the province to receive his permanent license to practice."

Trend of Specialization on Hospital Administration

It can well be seen that the various hospitals, particularly those not associated with universities, that determine to engage in either intern training or in the training of residents in the specialties, must change their entire attitude toward these educational functions and must provide additional funds for them and readjust their various staffs in such a way as to meet these increasing demands. Whether the hospitals can meet these conditions depends much on future development. Certainly, it will result in more highly trained professional skill available to patients who may have the good fortune to receive treatment in the hospital with approved internships and residencies, but marked changes in the economics in administration and professional attitudes must follow. The satisfaction of engaging in real educational efforts to the advantage and promotion of greater professional skill and effi-

ciency is a worthy objective in which hospitals will be concerned.—BLACK, B. W., *Hospitals*, March, 1940, p. 23.

Administrator's Influence on Intern Training

When it is considered how much the graduates of our medical schools still have to learn through practical experience, and how many of them go out from our internships to become the sole medical advisers of patients, the responsibility of the hospitals for their training is an important one. This responsibility is one of the greatest the administrator has. Too often he neglects it. Interns come and go so rapidly, that it is easy to procrastinate. But this rapid turnover makes it all the more simple to start improvements. The medical staff will be sure to be responsive; the governing board will be quick to see its importance; and no investment of time and effort by the administrator will yield more satisfying results. HOWARD, J. R., *Hospitals*, March, 1940, p. 30.

A. H. A. Approves Action on Internships

It was voted: That the Board of Trustees approve the action of the representatives of the American Hospital Association in voting favorably on the resolution of the Advisory Council on Medical Education.

"Inasmuch as the internship is now universally regarded as a part of the basic preparation for the practice of medicine and to be fully satisfactory must be integrated with the medical course proper, the Advisory Council on Medical Education recommends that the Association of American Medical Colleges, in cooperation with national medical and hospital organizations and the Federation of State Medical Boards and state licensing bodies, and after consultation with the Council on Medical Education and Hospitals of the American Medical Association, should formulate minimum educational standards for the internship and should prepare a list of hospitals in this country which meet these standards."

Teaching of Obstetrics

In 1939, a questionnaire was sent to the heads of the department of obstetrics of the sixty-six four year medical colleges of the United States for the purpose of eliciting information on the teaching of obstetrics. Replies were received from sixty-four colleges.

These replies gave exceedingly interesting, although variable, information, thus precluding drawing any definite conclusions on how obstetrics is being taught in our medical colleges. Perhaps, this variability is desirable. Local conditions naturally modify teaching in obstetrics. The amount of clinical material modifies what can be done by way of giving practical experience both in the home and in the hospital.

In 31 of the 64 colleges, obstetrics is being taught in the second, third and fourth years of the medical course. In 32 colleges, in the third and fourth years; in one college, in the fourth year only. The present trend in medical education is to free the third and fourth years from as much didactic work as possible, leaving the student free to limit his activities to clinical clerkships in the hospital and in the outpatient department, except for a daily conference with small groups of students when their work is discussed. This trend is reflected in the attempt to begin the teaching of obstetrics in the second year.

It is true, that a questionnaire does not lend itself to securing accurate information. And replies may be interpreted in one or more ways, usually more, except in a few specific instances. Questionnaire questions are like the hypothetical questions put by a lawyer. Often they cannot be answered definitely with "yes" or "no," which makes analysis of a questionnaire difficult, if not impossible. However, certain points can be extracted from it.

The number of "hours" devoted to the teaching of obstetrics, as given in the questionnaires, reflects well local conditions and viewpoints of teachers. Obstetrics and gynecology may be combined in a teaching program to the extent that

it is impossible to state the number of hours devoted to each subject. Manikin instruction may be a part of the regular course instead of being a separate discipline. It was found that hours of instruction varied from 200 to 30. It is not possible to state what instruction is given in the time allotted according to the questionnaire. Fifteen colleges give from 61 to 70 hours; 7, from 81 to 90 hours; 7, from 91 to 100 hours; 5, from 71 to 80 hours; 11, from 30 to 60 hours; 12, from 101 to 150 hours; 6, from 150 to 200 hours.

Time allotted for manikin work varied from no time to 48 hours. Eighteen colleges reported that they give from 4 to 10 hours; 9, from 11 to 15 hours; 11, from 16 to 20 hours; 8, from 21 to 25 hours; 9, from 26 to 48 hours. Nine colleges did not answer this question.

All the colleges have a prenatal clinic which is attended by all the students during their outpatient department clerkship.

As to delivery service: Of the sixty-four colleges giving information, 44 have students in residence during their term of service; 20 do not. The length of this service varies, from four days to eight weeks. Eighteen colleges did not give any information on this point. Of the remaining forty-three, 1 has a four days service; 5, two weeks service; 7, three weeks; 8, four weeks; 4, five weeks; 4, six weeks and 1, eight weeks. One college has from 7 to 10 days.

Delivery service is rendered either in the hospital, in the home or in both. Thirteen colleges offer hospital service only; 8, home service only; 32, both hospital and home service. Seven colleges do not have any hospital service and 14 do not have any home service.

The number of cases attended by students varies considerably. One college reported that as many as 75 deliveries are made by each student in the hospital. Another college reported that as many as 40 deliveries are made by each student in the home. Aside from these two extremes, the number of deliveries in hospital and in home varies

from 2 to 25. The replies to these two questions definitely answered the question "how many deliveries are made by each student (1) in the hospital; (2) in the home.

Aside from this personal delivery service, students also have, in many, if not all, colleges opportunity to witness deliveries as bystanders. The number varies from 4 to 150. Four colleges reported from 6 to 10 witnessed deliveries; 9, from 11 to 15; 6, from 16 to 20; 4 each from 21 to 25 and 26 to 30; 3, from 31 to 35; 7, from 36 to 40; 3, from 41 to 45; 7, from 46 to 50; 16, from 60 to 150.

Maternity service is bound to be a variable factor because the supply must regulate the opportunity for service. True, some obstetricians believe that all deliveries should be made in the hospital despite the fact that such service may not be available to every practitioner, hence, if hospital trained, they may be at a disadvantage or, at least, find it difficult, if not impossible, to proceed as they would in a hospital. These men argue that adequate training in the conduct of a delivery can only be given in a hospital. Most home delivery services are splendidly organized and conducted; some are not. They are more or less makeshifts and should either be abandoned or reorganized on an acceptable basis. That is wholly a departmental matter, not one of available supply.

While no one would insist that there be uniformity in procedure in all medical colleges, yet this survey does show that in some colleges there is need for radical revision of the teaching of obstetrics. It is a pity that space forbids

publishing the table prepared from the replies received to the questionnaire. The information contained in this table is presented by colleges thus permitting of making comparisons although comparisons are always said to be odious.

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Rockefeller Foundation Report

The annual report of the Rockefeller Foundation for 1939 shows grants were made to medical sciences in the amount of \$1,927,180 for the support of work in psychiatry, neurology and allied subjects. A grant of \$400,000 was made for dentistry and is included in the total named above.

Endocrinology came in for \$111,000; teaching public health (at Johns Hopkins) for \$350,000; research on carbohydrate metabolism as related to mental disease (Toronto), \$106,800. Some grants are payable in three annual instalments; some in ten. Six foreign institutions received altogether about \$150,000 in support of research in psychiatry (Norway, Belgium, England, Sweden).

Approximately \$1,000,000 was distributed in support of experimental biology—the relation of physics, chemistry, genetics, embryology and growth and nutrition studies to the phenomena of life. The work being done by Yale University in primate biology was given liberal support. Considerable sums were given to support fellowships — many under the control of the National Research Council. Many of these fellows are working on problems closely related to medicine and to life. The Foundation has distributed its largess well.

College News

Yale University School of Medicine

Dr. Stanhope Bayne-Jones, dean since 1935, has found it impossible to accept reappointment to this position, it is announced. His time will be devoted to other positions as chairman of the executive committee of the division of medicine and public health of the president's committee on university development, as director of the board of scientific advisers of the Jane Coffin Childs Memorial Fund for Medical Research and as professor of bacteriology. Dr. Bayne-Jones was chosen unanimously for reappointment by his colleagues on the board of permanent officers of the medical school, by the president and by the corporation of the university.

* *

Emory University School of Medicine

The John and Mary R. Markle Foundation of New York has given a grant-in-aid of \$1800 for Dr. Harold Bowcock's research in nutrition studies in diabetes. Dr. Bowcock is an assistant professor of medicine and has already done some noteworthy studies in diabetes.

* *

Stanford University School of Medicine

The fifty-eighth course of Popular Medical Lectures was begun April 5th. The second lecture was delivered April 19th; the third, May 3rd. The fourth lecture will be delivered May 17th. Lecturers were: Dr. Hans Lissner: subject, "Outstanding Achievements in Endocrinology;" Dr. Frederick A. Fender: subject, "Epilepsy and the Convulsive State; New Light on an Age-Old Problem;" Dr. Nelson J. Howard: "Civilization's Challenge to Surgery: Recent Development in the Treatment of Injury;" Dr. Eric Liljencrantz: "Aviation Medicine."

Dr. Hale F. Shirley, assistant professor of psychiatry, State University of Iowa College of Medicine, Iowa City, has been appointed assistant professor of psychiatry and pediatrics and director of the new child guidance clinic at Stanford University School of Medicine. The Commonwealth Fund recently gave a grant of \$10,000 a year for three years to finance the clinic under the direction of the departments of psychiatry and pediatrics. The new clinic will be an expansion of the present work on behavior problems and will provide opportunities for graduate and undergraduate training of physicians in this field.

The Morris Herzstein Lectures for 1940 were delivered on April 8, 10 and 12 by Dr. David Bruce Dill, professor of industrial physiology in Harvard University. Dr. Dill, an authority on the physiology of man in relation to changes in altitude and temperature spoke on "high temperatures," "low temperatures" and "high altitudes" and their clinical adaptation to hyperthermia, hypothermia and oxygen lack. These lectures are open to the public as well as to physicians.

* *

University of Virginia Department of Medicine

Dr. Soma Weiss, Hershey Professor of Medicine at Harvard University, gave the second Alpha Omega Alpha address February 19. His subject was "The Medical Student Before and After Graduation."

The twenty-fifth Postgraduate Clinic of the University of Virginia Medical School in connection with the University of Virginia Division of Extension was held April 5 and 6, under the chairmanship of Dr. Staige D. Blackford. Sixty-three physicians registered for the two-day clinic. On Friday, Dr. George M. Lawson, Professor of Preventive Medicine and Bacteriology, spoke on the subject of Viruses; Dr. Edward Francis,

Medical Director of the United States Public Health Service, spoke on Tularmia; and Dr. William McCully James, of the Herrick Clinic, Panama, Republic of Panama, spoke on Amebiasis. A special clinical demonstration of electroencephalography was given by Dr. David C. Wilson, Professor of Neurology and Psychiatry, and Dr. E. L. Corey, Assistant Professor of Physiology. On Friday evening Dr. James gave the James Carroll Flippin Memorial Lecture, speaking on Observations of Malaria. On Saturday, Dr. Albert Victor Hardy, Assistant Professor of Epidemiology at Columbia University, spoke on Undulant Fever; Dr. J. Earle Moore, of Baltimore, spoke on Syphilis; and Dr. R. Eugene Dyer, Senior Surgeon of the United States Public Health Service, discussed the Rickettsial Diseases.

* *

*University of Rochester
School of Medicine*

Dr. George H. Whipple was awarded a fellowship "for distinguished attainment in the field of pathology" by the Rochester Museum of Arts and Sciences.

Dr. Harold C. Hodge has received a grant from the Council on Therapeutics of the American Medical Association for the study of barbiturates.

Dr. John J. Morton has been elected President of the Society of Clinical Surgery and reappointed a member of the Committee on Bone Sarcoma for the year 1940 by the American College of Surgeons.

* *

Medical College of Virginia

Dr. Everett I. Evans, assistant in surgery, has been granted a Rockefeller fellowship for study at the Massachusetts General Hospital for a year, to begin April 1, 1940. He will work under Dr. Edward D. Churchill in thoracic surgery and under Dr. Henry K. Beecher in anaesthesia.

Miss Aileen W. Brown, associate professor of dietetics, has been awarded a fellowship by the General Education

Board of New York for a year's work in dietetics at Columbia University.

Phi Beta Pi medical fraternity guest speaker, Dr. L. B. Arey, professor of anatomy in Northwestern University, on March 16 delivered the initial lecture of a lectureship recently established here by the fraternity. Doctor Arey's subject was "Wound Healing."

Gifts and grants recently received are: Kiwanis Club of Richmond, \$1,000 for loan fund for senior students in the four schools; Emergency Committee for Displaced Foreign Scientists, \$2,400; Richmond Community Fund, \$18,846 for the Outpatient Clinic; anonymous, \$30,000 for clinic building equipment; Phelps-Stokes Fund for St. Philip school of nursing library, \$100, and \$1,000 from the Carnegie Corporation for the continuation of an artist in residence.

* *

*University of Buffalo
School of Medicine*

Dr. Dewitt H. Sherman, for many years professor of pediatrics, left a bequest of about \$225,000 to the university for a new medical building. In addition, Mrs. Sherman has made a gift of \$200,000 for the fund.

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Meharry Medical College

Dr. Ludvig Hektoen, executive director of the National Cancer Institute visited the College for the purpose of studying the progress of the Tumor Clinic which receives a grant-in-aid from the Institute.

Dr. David Rioch, head of the department of neuropsychiatry of Washington University also paid the College a visit. He is interested in Negro physicians who show an aptitude for psychiatry.

Other visitors were Dr. Hugh Leavell, health officer of Louisville and professor of public health in the School of Medicine of the University of Louisville, and Dr. Doxey A. Wilkerson who is assisting Dr. Gunnar Myrdal in making a study of Negro education in the United States.

"The Meharry News" is the new stu-

dent publication of the College. The first number appeared in February.

A drive is on to increase the present endowment of the College by \$6,000,000. It is reported to be progressing very well.

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*Duke University
School of Medicine*

February 26th, the Nu Sigma Nu Medical Fraternity held in the Duke Hospital amphitheatre an informal round table discussion on the "Problems of a Young Doctor in Private Practice." Participating in the panel were Dr. Wingate M. Johnson, of Winston-Salem, Editor of the North Carolina Medical Journal and former President of the State Medical Society; Professor Harold Meyer, Sociologist of the University of North Carolina; Professor Douglas B. Maggs, of the Duke University Law School; Professor Leroy Lewis, Instructor in Public Speaking at Duke University and Dr. W. C. Davison, of the Medical School. Questions included in the discussion brought up matters of professional ethics, legal, social, and business aspects of medical practice.

February 27th, Dr. W. M. Firor, acting professor of surgery, The Johns Hopkins University School of Medicine, held a clinic on "Burns."

March 12th, Dr. Mark V. Ziegler, assistant surgeon, U. S. Public Health Service, Washington, D. C., lectured on "Opportunities in the United States Public Health Service."

March 13th, Dr. Halbert L. Dunn, chief vital statistician, Census Bureau, Washington, D. C., lectured on "Vital Statistics and Death Certificates."

March 15th, Dr. Arthur M. Shipley, professor of surgery, University of Maryland Medical School, Baltimore, held a clinic on "Traumatic Wounds of the Abdomen and Chest, and suppurative Lesions of the Lung, Mediastinum, and Pericardium."

A grant was made by the Rockefeller Foundation for one year in support of the investigation of the physical chem-

istry of problems by Dr. Hans Neurath, assistant professor of biochemistry.

A field nutrition study has been established in cooperation with the Rockefeller Foundation and the State Board of Health. Sera coming from a survey area in a rural section are tested in the nutrition laboratory at Duke, and careful medical and dietetic studies are to be carried on in the field. The plan is to assess the nutrition status of small representative communities by use of all the procedures at present available, and in the light of the results obtained to broaden the program to include larger areas in the state.

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*Indiana University
School of Medicine*

The Indiana State Board of Health erected its new building on the University campus in Indianapolis.

New Appointments: Full time admitting and discharging officer: Dr. David A. Boyd, full time head of the department of mental and nervous diseases; Dr. Arthur P. Echternacht, roentgenologist; Dr. Lyle Weed, assistant professor of bacteriology; Dr. Felix Ballenger, fellowship in research; Mr. Robert Forney, department of biochemistry and pharmacology.

An extensive two year course for graduate physicians in general practice has been set up. The trustees of the university have granted \$10,000 annually to the City Hospital for establishment of a full time staff in the hospital dispensary, thus increasing teaching facilities.

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*University of Michigan
Medical School*

Dr. Charles Fremont McKhann, associate professor of pediatrics and communicable diseases, Harvard Medical School and the Harvard School of Public Health, Boston, has been appointed professor and head of the department of pediatrics and communicable diseases. He succeeds the late Dr. David Murray Cowie.

*University of California
Medical School*

A refresher course for graduate physicians will be offered June 3 to 6, 1940. The course will cover "Various Aspects of Chronic Diseases" and will include a discussion of the problems of cancer, heart disease, arthritis, kidney disease, mental disease, and tuberculosis. Detailed programs may be obtained from the Dean's Office of the Medical School. This short, intensive course will be designed to meet the needs of physicians in practice. Discussions will be illustrated with patients, lantern slides or pathological material. All sessions will be held in Toland Hall, University of California Hospital.

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*University of Minnesota
Medical School*

The Annual George Chase Christian Lecture presented by the Cancer Institute of the University of Minnesota was given April 30, by Dr. John J. Bittner, National Cancer Institute Fellow, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. His subject was "Breast Cancer as Influenced by Nursing."

The Board of Directors of the John and Mary R. Markle Foundation has awarded Dr. Cecil J. Watson, associate professor and director of the division of internal medicine, University of Minnesota Medical School, a grant-in-aid of \$3,600, in support of his studies of the significance of the excretion of various porphyrins.

The National Tuberculosis Association has approved a grant of \$500 to the University of Minnesota for a study under the direction of Dr. Arthur T. Henrici of the department of bacteriology for an investigation of the acidfast actinomycetes in relation to tuberculosis.

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*University of Illinois
College of Medicine*

Dr. Temple S. Fay, professor of neurology and neurosurgery, Temple Uni-

versity School of Medicine, Philadelphia, discussed, "Temperature Factors as Related to Cancer," April 27. The lecture, sponsored by Alpha Omega Alpha, is open to students, faculty members and all interested persons.

The Gehrmann Lectures for 1939-1940 were delivered by Conrad A. Elvehjem, Ph.D., department of biochemistry, University of Wisconsin College of Agriculture, Madison, Wis., April 17, 18 and 19. His subjects were: "Vitamins and Deficiency Diseases"; "Methods of Determining Vitamin Deficiencies," and "Vitamins and Normal Nutrition."

♦ ♦

*University of Louisville
School of Medicine*

The inaugural Ephraim McDowell lecture, an annual event sponsored by the Phi Beta Pi Medical Fraternity, was delivered March 6th, by Dr. M. Herbert Barker of Northwestern University Medical School. His subject was "Modern Pioneers in Vascular Diseases." Dr. Irvin Abell, professor of surgery, gave a resumé of the life and work of Dr. McDowell.

♦ ♦

*Louisiana State University
School of Medicine*

Through Dr. Urban Maes, Director of the Department of Surgery, Mrs. George S. Bel has just established an annual cash award of \$50 as a memorial to her husband, the late Dr. George S. Bel, who died in August, 1939. Dr. Bel had been Director of the Department of Medicine at L.S.U. since the founding of the school. Mrs. Bel stipulated that the award be presented annually to the fourth year medical student "who symbolized the highest ideals of medicine" and listed as attributes which Dr. Bel had considered essential in the good physician "scientific interest, ethics, personality, tact, bedside manner, ability to handle people, kindness to patients, an aim to serve humanity rather than mercenary ambitions, and clinical ability."

The winning student is to be selected

from the ten highest ranking students in the fourth year class after they have been listed in order of preference by a representative committee of the general faculty headed by the Dean of the School and the Chairman of the Executive Committee. The prize is to be known as the George S. Bel Memorial Award and will be presented for the first time at the end of the current school session.

The C. V. Mosby Company of St. Louis, which for some years has presented a yearly subscription to *The American Journal of Obstetrics and Gynecology* to the third year student who makes the highest grades in that specialty, has just offered to present a similar subscription to *Surgery* to the third year student who makes the highest grades in surgery. Both journals are published by the Mosby Company.

On exhibit in the library at the present time is the first of a series of monthly displays prepared by Mr. Postell, librarian of the Agramonte Memorial Library, in cooperation with Mr. Stewart, Director of Medical Art. The feature of the display is a series of drawings reproduced by the art department from mediaeval anatomical prints. By examination of these drawings we can see what conceptions the anatomists of antiquity held with regard to the anatomy of the human. Copies of various anatomical reviews, complete or incomplete files of which are in the library, are also displayed. Finally, the display draws attention to the recent publications of the Department of Anatomy.

Beta Zeta Chapter of Phi Beta Pi fraternity has established an annual lectureship in honor of Dr. George W. McCoy, United States Public Health Service, professor of preventive medicine and public health. The first lecture was delivered March 26, by Dr. Walter C. Alvarez of the Mayo Clinic. His subject was, "The Origins of Modern Medicine."

Dr. Frederick Fitzherbert Boyce, assistant professor of surgery in the Graduate School of Medicine of Louisiana State University, has been awarded the 1940 Samuel D. Gross Prize for his

research work entitled "The Role of the Liver in Surgery." The prize is offered every five years by the Philadelphia Academy of Surgery, for original research work in the field of surgery, and is in the amount of \$1500.

* *

Western Reserve University School of Medicine

Two legacies have been received. The estate of the late Dr. H. C. Bliss and Nellie Hoover Bliss, his wife, will probably have a net value of \$27,000. From the estate of the late Louis Rorimer the Continuous Fund Raising Program receives a gift of \$1,000.

* *

University of Oregon Medical School

The Dazian Foundation for Medical Research, New York, has made a grant of \$2,500 for research on problems of the nervous system under the direction of Dr. Robert S. Dow, assistant professor of anatomy.

* *

Long Island College of Medicine

March 29th, the College celebrated its eightieth anniversary with appropriate ceremonies. Addresses were delivered by Dr. William Allan Neilson and the Honorable Alfred E. Smith. It is a far cry from the first course of lectures which began March 29, 1860 and continued for sixteen weeks to the present curriculum of four years each of thirty-two weeks duration.

The Adam M. Miller Memorial Lecture was delivered May 1st by Dr. Thomas Addis, professor of medicine, Stanford University School of Medicine. His subject was "The Anatomical and Physiological Concepts Underlying the Treatment of Glomerular Nephritis."

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University of Arkansas School of Medicine

Dr. Duff S. Allen, assistant professor of surgery, Washington University School of Medicine, delivered the third

annual lecture of the University of Arkansas School of Medicine under the auspices of Beta Theta Chapter of Phi Beta Pi Medical Fraternity, April 13th. His subject was "The Effect of Toxic Goitre on the Heart."

♦ ♦

*University of Vermont
College of Medicine*

The Springfield Hospital, Springfield, Massachusetts, and the Worcester City Hospital, Worcester, Massachusetts, are giving service as affiliated teaching hospitals in obstetrics, pediatrics, dermatology and urology. Members of the staff in both hospitals have been added to the faculty. Students will be assigned for teaching in these hospitals for a definite period. A full time anesthetist has been appointed at the Mary Fletcher Hospital.

Dr. G. C. Berkley of St. Albans has presented the University of Vermont College of Medicine with a case of surgical instruments once, apparently, the property of Dr. William Beaumont. Dr. Beaumont obtained much of his medical training in an apprenticeship under Dr. Benjamin Chandler, who practiced at St. Albans in the period around 1800 and for a number of years thereafter.

Shortly after settling in Champlain, New York, in 1807, Beaumont began his medical studies by "reading medicine" under Dr. Seth Pomeroy of Burlington. In 1810, Beaumont went to St. Albans to begin his apprenticeship under Dr. Chandler. He remained there two years, his schooling consisting of bedside experience, dissection of amputated material and extensive reading.

Beaumont's license to practice was granted in Burlington in June of 1812 by the Third Medical Society of the State of Vermont.

Valuable laboratory and research space will become available for the departments of pathology and bacteriology on completion of the University's new \$1,250,000 building, which will centralize the University administration departments and will house many other University activities. Construction will start on the building in June, and it is

expected that it will be ready for occupancy in September, 1941.

♦ ♦

*University of Cincinnati
College of Medicine*

Dr. Glenn E. Cullen, professor of biochemistry in the Graduate School and professor of pediatric research in the College of Medicine, director of laboratories Children's Hospital Research Foundation since 1931, died April 11th of coronary occlusion. Dr. Cullen had a distinguished career as a teacher and investigator and enjoyed a most enviable reputation in his chosen field of activity.

During the year 1939-1940, the College received a total of \$113,650 as grants-in-aid to support research in the various departments. This sum was contributed in part by various philanthropic friends of the medical school and in part by a number of foundations. The total amount was made available for immediate expenditure and represents an addition to the regular budget of the medical college. During the first three and one-half months of the present calendar year, the college has received \$67,520 in similar grants for the same purpose. During the last eighteen months the capital endowment of the College has been increased by \$550,000.

♦ ♦

*University of Southern California
School of Medicine*

The Cavanee Lectures in neuropsychiatry were delivered on April 8-10, at the University of Southern California by Dr. Franklin G. Ebaugh of the University of Colorado.

♦ ♦

*Georgetown University
School of Medicine*

Dr. William G. MacCallum, Baxley professor of pathology, Johns Hopkins University School of Medicine, Baltimore, delivered the annual Kober lecture March 28, on "Pathology of the Parathyroid Glands." He was presented with a certificate and honorarium of \$500 provided by the Kober Foundation. The lecture commemorates the late Dr. George M. Kober, Washington, and is given on his birthday.

*Marquette University
School of Medicine*

Dr. Eben J. Carey, dean and professor of anatomy, delivered the ninth Walter M. Brickner Lecture of the Hospital for Joint Diseases, New York, April 26. His subject was "The Dynamics of Skeleto-Muscular Deformities."

*University of Missouri
School of Medicine*

Former students of Dr. Mazyck P. Ravenel, professor emeritus of medical bacteriology and preventive medicine are presenting an oil portrait of him to the university later in the year. Dr. Ravenel was active at the medical school from 1914 to 1936.

Jefferson Medical College

The Jefferson Alumni Association will hold its reunion banquet at the Murray Hill Hotel, New York City, June 12, at 7 p.m. Requests for reservations should be sent to Dr. Thomas F. Duhigg, care of Murray Hill Hotel, New York City.

The William Potter Memorial Lecture was delivered by Dr. Irvin Abell, Clinical professor of surgery, University of Louisville School of Medicine, February 14, 1940. His subject was "The Spirit of Medicine."

*Columbia University College of
Physicians and Surgeons*

Dr. Harry Stoll Mustard, Hermann M. Biggs professor of preventive medicine, New York University College of Medicine, has been appointed director of the DeLamar Institute of Public Health at Columbia University to succeed Dr. Haven Emerson, who plans to retire July 1. Dr. Mustard will also be professor of public health practice.

Dr. Ernest L. Stebbins, assistant commissioner for preventable diseases, New York State Department of Health, has been appointed professor of epidemiology, and John W. Fertig, Ph.D., associate in biostatistics, Johns Hopkins University School of Hygiene and Public Health, Baltimore, has been made professor of biostatistics.

*Tufts College
Medical School*

The appointment of Kurt Goldstein, M.D., to the faculty, made possible by a five-year grant for teaching and research in neurology from the Rockefeller Foundation, was announced yesterday by President Leonard Carmichael. Dr. Goldstein, who is one of the foremost experts in brain injuries in this country and abroad, began his appointment on June 1 as clinical professor of neurology at the Boston Dispensary unit of the New England Medical Center of which Tufts is the teaching base.

*University of Kansas
School of Medicine*

The tenth course of lectures under the Porter Lectureship in Medicine was given by Dr. Russell L. Haden of Cleveland, Ohio, formerly a member of the University of Kansas faculty, April 30, and May 1st. Dr. Haden lectured on: "Hemolytic Anemia;" "The Red Blood Cell of Man;" "Polycythemia."

University of Chicago

Postgraduate courses in obstetrics will be offered April 29 to June 8 and June 17 to July 20. Applications should be made to Postgraduate Course, Department of Obstetrics, 5848 Drexel Avenue, Chicago.

*Northwestern University
Medical School*

A gift of more than \$2,000,000 has been received for the erection and endowment of the Morton Memorial Hospital on the Chicago Campus to be used for medical research.

Wesley Hospital, one of the teaching hospitals of Northwestern, erection of which was begun several years ago on the Chicago Campus but was discontinued temporarily, has received a gift of \$2,500,000. This gift will make possible completion of this hospital.

The Floyd E. Patterson Memorial Building houses the Passavant Hospital, the third hospital in the Northwestern group on the Chicago Campus.

General News

American Public Health Association

The 69th Annual Meeting of the American Public Health Association will be held in Detroit, Michigan, October 8-11, 1940. The Michigan Public Health Association, the American School Health Association, the International Society of Medical Health Officers, the Association of Women in Public Health, and a number of other allied and related organizations will meet in conjunction with the Association.

Bernard Portis Research Fellowship Fund in Surgery

This fellowship has been established at Michael Reese Hospital, Chicago. The object of the fund, which provides \$1,000 annually for a full time fellow, is to arrange research training in surgery for young men who have had basic and fundamental training in surgery. Graduates of recognized medical schools who have had internships in approved hospitals will be considered. Applicants should submit their problems in writing, together with an estimate of facilities and supplies needed, to Dr. Sidney A. Portis, secretary of the newly formed fund.

New York Hospital Ledyard Fellowship

First awards under the Lewis Cass Ledyard, Jr., Fellowship, "for original medical research of high order," have been made to Dr. Willis Fiske Evans of Richmond, Va., and Dr. Charles O. Warren, Jr., of Boston. Approximately \$4,000 will be provided for the research of each fellow.

The fellowship was established last year by Mrs. Ruth E. Ledyard in memory of her husband, a governor of the hospital. Inasmuch as no appointment was made at that time, the present awards are for 1939 and 1940.

Dr. Evans' fellowship provides for a study of the peripheral blood flow.

Dr. Warren will continue research on the physiology of the bone marrow. He is also recipient of a grant in aid of research from the Committee on Scientific Research of the American Medical Association.

* *

Frederick Tilney Research Fellowships in Neurological Sciences

Formation of an organization to raise an endowment fund of \$150,000 to establish fellowships in neurology as a memorial to the late Dr. Frederick Tilney has been announced. The principal of the memorial fund will be in the custody of the trustees of Columbia University. Selection and assignments of research topics and the investigation of fellowships will be made by a committee, to be known as the Tilney Memorial Committee, made up of the executive officer of the department of neurology at Columbia University College of Physicians and Surgeons as chairman, the president of the board of managers of the Neurological Institute, and the dean of the medical school. Fellowship activities are to be carried out at the Neurological Institute but may from time to time be transferred to any part of the world which may in the opinion of the committee provide the most favorable conditions. Subscriptions to this endowment fund may be sent to the Frederick Tilney Memorial, Inc., 610 Park Avenue, New York. Dr. Tilney, who died Aug. 7, 1938, was professor of neurology and neuro-anatomy at Columbia from 1914 until his death.

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Catholic Hospital Association

The silver jubilee convention of this Association will be held in St. Louis, Missouri, June 17-21, 1940.

Book News

Obstetrics and Gynecology

By the Departmental Staff of the University of Chicago and Other Contributors. Edited by Fred L. Adair, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, University of Chicago. In Two Volumes. Lea & Febiger, Philadelphia. 1940. Price, \$10 per volume.

This work has been written in the full realization of the social and economic importance of human reproduction in its manifold aspects. It is not intended to be a work of reference, but is designed as a complete and systematic guide for the practitioner and the student. It stresses principles rather than non-essential details and it orients the fields of gynecology and obstetrics to biology and medicine in general. The editor and contributors believe that gynecology and obstetrics should be so combined in presentation so as to avoid duplication and to improve service, teaching and research. They have accordingly included everything that they consider essential to the student and general practitioner. The principles that underlie the important operative procedures are presented with their indications and contra-indications. Throughout, the work stresses the relationship of the individual practitioner and the patient. The text is clear, easily read and understandable. The illustrations are most commendable. Every student should have these books and use them. Although the size of the books may be considered by some an objection to their use as student texts, they are a significant contribution to present pedagogic principles as well as to the subjects considered. Obstetrics and gynecology should be combined in teaching undergraduates. Why do not all textbooks have a bookmark? It is so useful.

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Pathological Histology

By Robertson F. Ogilvie, M.D., Lecturer in Pathology, University of Edinburgh. With a Foreword by A. Murray Drennam, M.D., Professor of Pathology, University of Edinburgh. A William Wood Book: The Williams & Wilkins Company, Baltimore. 1940. Price, \$8.50.

The beautiful several hundred colored illustrations presented in this book are a distinctive feature, one which will make a strong appeal to the student. Other notable features are the macroscopical account of diseased tissues and organs, a discussion of etiology and of the significance of microscopic findings in relation to the nature of the disease. The general arrangement of subjects and topics is the usual one.

Fundamentals of Internal Medicine

By Wallace M. Yater, M.D. Professor and Director of the Department of Medicine, Georgetown University School of Medicine. 1st Ed. Revised. D Appleton-Century Company, New York. 1940. Price, \$9.

A complete revision of the first printing. A good book for the medical student. Colateral reading is strongly encouraged.

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Management of Obstetric Difficulties

By Paul Titus, M.D., Obstetrician to the St. Margaret Memorial Hospital, Pittsburgh. 2nd Ed. The C. V. Mosby Company, St. Louis. 1940. Price, \$10.

Complete revision, including deletions and additions, has increased the size of the book but has added greatly to its value. The author, an authority in his field, writes for himself, expressing his own opinions, which enhances the value of the book for the student, the research worker and for the man who is training for this specialty. Beautifully illustrated; good chapter references.

* *

The Study of Anatomy

Written for the Medical Student. By S. E. Whitnall, Professor of Anatomy, University of Bristol, England. 4th Ed. A William Wood Book: The Williams & Wilkins Company, Baltimore. 1939. Price, \$1.75.

The purpose of this book is to impress the medical student with the fact that human anatomy must be considered in relation to the living body and its development, physiology and other cognate subjects and future clinical work. Every medical student should have a copy and read it carefully and thoughtfully. It is more than a text in anatomy. It is a dissertation on what can be learned from the study of anatomy and how to learn it; how to interpret and how to apply it to future work. It is a challenge to thinking.

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Massage and Remedial Exercises

In Medical and Surgical Conditions. By Noel M. Tidy, Halton, England. 4th Ed. A William Wood & Company Book: The Williams & Wilkins Company, Baltimore. 1939. Price, \$5.25.

It is what the title indicates, written by a man who has had much experience with physical means of treatment. It can be recommended to those who follow this line of work.

Handbook of Skin Diseases

By Leon H. Warren, M.D., formerly instructor in Dermatology and Syphilology, Temple University School of Medicine. Paul B. Hoeber, Inc. Medical Book Department of Harper & Brothers, New York. 1939. Price, \$3.50.

A synoptic guide to diagnosis and treatment of about 250 skin diseases, presented in alphabetical order, concisely but completely. Lends itself well to quick and ready reference. Well indexed.

* *

Pathology

An Introduction to Medicine and Surgery. By J. Henry Dible, M.B., F.R.C.P., Professor of Pathology, University of London, and Thomas B. Davie, M.D., M.R.C.P., Professor of Pathology, University of Liverpool. The Blakiston Company, Philadelphia. 1939. Price, \$10.

Pathologic changes are presented as a series of processes going on in the living body and leading to certain consequences. The book is arranged in three sections: Inflammation, special infections and systemic pathology. The principles of pathology are stressed, how conditions arise and evolve, rather than the recognition of morbid anatomic changes which, the authors hold, must be learned in the postmortem room and in the museum. It is an aid in the study of the natural history of disease, which must prove helpful to the student who is too apt to think in terms of macroscopic changes. The book is profusely but well illustrated.

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The Therapeutics of Internal Diseases

By many Authors. Supervising Editor, George Blumer, M.D., David P. Smith Clinical Professor of Medicine, Yale University School of Medicine, and Associate Editor, Albert J. Sullivan, M.D., Chief Medical Officer, Gallinger Municipal Hospital, Washington, D. C. Volumes I and II. D. Appleton-Century Company, New York, 1939. Price, \$10. per volume.

In volume I, the underlying principles and the special technical procedures of therapeutics are considered, and in the succeeding ones, after a general consideration of the action of the important groups of drugs and some discussion of convalescence and certain conditions common to many diseases, the individual cases are considered. The prevention and treatment of each disease is clearly and systematically considered, beginning with a diagnostic summary and a discussion of the philosophy of treatment and ending with prophylactic measures. Short reference lists of recent and important articles are added.

Volume II is chiefly concerned with the

management of infectious diseases. The discussion is preceded by a section on the pharmacology of the important groups of drugs, emphasizing the principles which should underlie their use in practice, and chapters on their toxicology, including the treatment of the various forms of poisoning. There is also a chapter on the general management of the sick including a discussion of their care during convalescence.

* *

Vitamin D

Chemistry; Physiology; Pharmacology; Pathology; Experimental and Clinical Investigations. By C. I. Reed, Ph.D., Associate Professor of Physiology; H. C. Struck, Ph.D., Associate in Physiology, and I. E. Steck, M.D., Instructor in Physiology and in Medicine, College of Medicine, University of Illinois. The University of Chicago Press, Chicago. 1939. Price, \$4.50.

All that is known about vitamin D, presented in an interesting and informative manner. Very enlightening.

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Disorders of the Blood

By Lionel E. H. Whitby, F.R.C.P., D.P.H., and C. J. C. Britton, M.D., D.P.H., Assistant Pathologists, the Bland-Sutton Institute of Pathology. 3rd Ed. The Blakiston Company, Philadelphia. 1939. Price, \$7.50.

Presenting the hematological knowledge of recent years in a reasonable compass, incorporating the experience of the authors in teaching and practice. Diagnosis, pathology, treatment and technique are covered in a clinical grouping of all clinical entities. Good work.

* *

Textbook of Laboratory Diagnosis

By Edwin E. Osgood, M.D., Associate Professor of Medicine and Head of the Division of Experimental Medicine, University of Oregon Medical School. 3rd Ed. The Blakiston Company, Philadelphia. 1939. Price, \$6.

A practical guide to the best modern methods for the laboratory worker and the physician, and a textbook for students. The contents are presented in two divisions: one required at the bedside and one required in the laboratory. An index of diseases shows the best method to follow in any given condition and refers to a discussion of its clinical significance and interpretation. The necessity for correlation of facts is stressed, and a clear, detailed study of each method and its findings is presented. The illustrations, although few in number, are most commendable. Students will find this book useful.

Cardiovascular-Renal Disease

A Clinicopathologic Correlation Study Emphasizing the Importance of Ophthalmoscopy. By Lawrence W. Smith, M.D., Professor of Pathology; Edward Weiss, M.D., Professor of Clinical Medicine, Walter I. Lillie, M.D., Professor of Ophthalmology, Frank W. Konzelman, M.D., Professor of Clinical Pathology and Edwin S. Gault, M.D., Associate Professor of Pathology, Temple University School of Medicine. D. Appleton-Century Company, New York. 1939. Price, \$4.50.

A pooling of all information available on cardiovascular-renal disease with proper correlation, thus giving a much broader concept of the term. No claim is made for originality or newness except for the conjoint presentation made by pathologists, clinicians and ophthalmologists. The "case" method of teaching is used to a considerable degree, with many good tabulations to clarify and elucidate. The illustrations are excellent. For him who wants to go further, a good bibliography is appended.

Ten Years in the Congo

By W. E. Davis, M.D. Reynal and Hitchcock, New York. 1940. Price, \$2.50.

The author was a medical missionary in the Congo for ten years. Here he tells his story. It is most interesting and illuminating, depicting the daily life of a medical missionary from the point of view of one who really enjoyed it. Dr. Davis also gives much information about the country, its people, their habits and customs in a delightful manner. It is a book that one wants to finish before laying it down. And it is different from the usual book of this sort. It should have been titled "The Life of a Doctor in the Congo." It conveys the conviction that the medical missionary has an important place in furthering the welfare of the people he serves.

The Pathology of Internal Diseases

By William Boyd, M.D., Professor of Pathology and Bacteriology, University of Toronto. 3rd Ed. Lea & Febiger, Philadelphia. 1940. Price, \$10.

Completely revised and much new material added without increase in the size of the book. An invaluable book for student and practitioner.

This work presented for the first time in a single volume the relations of anatomy, histology and physiology to the problems which confront every general practitioner. It gives him the knowledge without which he guesses and gropes. It describes the causes and nature of internal diseases and traces their progress. It is a safe and conservative guide covering each disease fully and intensively.

Reports on Medical Progress

1939. As Published in the New England Journal of Medicine. Compiled and Edited by Robert N. Nye, M.D. Little, Brown and Company, Boston. Price, \$5. These fifty-two progress reports cover the specialties and the commonly encountered aspects of general medicine and surgery. Each report was prepared specially by the author of the original paper. This is better than a reference book. It is a mine of valuable information presented by authorities in their respective fields.

The Patient's Dilemma

The Quest for Medical Security in America. By Hugh Cabot, M.D. Reynal & Hitchcock, Inc. New York. 1940. Price \$2.50.

The author presents a discussion which he believes the American people need for securing adequate attention to their health in terms of equipment, scientific knowledge, personnel and medical education and the most practical ways of organizing these facilities for the desired end. Adequate medical care is the concern of a large portion of the American people. Dr. Cabot tries to tell them how they can get it.

Essentials of the Diagnostic Examination

By John B. Youmans, M.D., Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University School of Medicine. The Commonwealth Fund, New York. 1940. Price, \$3.

This handbook sets forth procedures of the diagnostic examination that are essential to all good medical practice. It presents in compact form a thoroughly sound and scientific plan which is adequate for the great majority of cases, and which, in the occasional more difficult case, indicates the kind of further study needed.

Of especial interest is the laboratory section, which presents the physiologic background of the tests, indications for their use, and their diagnostic significance. These tests, because of their simplicity as well as reliability, can be performed by the physician in his own office, and in the majority of cases they make unnecessary more elaborate and expensive procedures. A list of the necessary apparatus and chemicals is given.

Dr. Youmans outlines the basic physical examination, and considers the technique, the possible findings, and the significance of these findings. The simplified discussions of cardiac and neurological examinations are particularly helpful. He offers a useful guide to history taking, with a discussion of the purpose and meaning of the various parts of the history, and suggestions as to technique.

*Combined Textbook of
Obstetrics and Gynecology.*

By J. M. Munro Kerr, M.D., Professor Emeritus of Midwifery, University of Glasgow. 3rd Ed. A William Wood Book: The Williams & Wilkins Company, Baltimore, 1939. Price. \$12.

An excellent reference book presenting in admirable manner what cannot well be taught at the bedside because of lack of time.

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Illustrations of Surgical Treatment

By Eric L. Farquharson, M.D., Tutor in Clinical Surgery, Royal Infirmary of Edinburgh. A William Wood Book: The Williams & Wilkins Company, Baltimore. 1939. Price, \$6.50.

Numerous photographs illustrate practical methods of surgical treatment rarely covered in textbooks on general surgery. The medical student, as well as the practitioner, will find this book useful.

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Elmer and Rose Physical Diagnosis

Revised by Harry Walker, M.D., Associate Professor of Medicine, Medical College of Virginia. 8th Ed. The C. V. Mosby Company, St. Louis. 1940. Price, \$8.75.

The importance of a good physical diagnosis is well brought out in this book. Too often physical diagnosis receives scant attention, the stress being placed on diagnosis by means of instruments. In this text, the latter is correlated with the former, as is proper. The arrangement of topics is a logical one. It follows through. The illustrations are helpful in supplementing the text. A good book for the student, if the price does not frighten him.

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Illustrative Electrocardiography

By Jacob Burstein, M.D., Associate Electrocardiographer and Chief of the Cardiac Clinic, Morrisania City Hospital, New York. 2nd Ed. D. Appleton-Century Company, New York. 1940. Price, \$5.

All that is known about the electrocardiogram and electrocardiography is contained in this fine work. By means of 106 plates, mainly depicting abnormal electrocardiograms, the progressive changes in the pathological physiology of the heart are demonstrated. Each plate emphasizes a single type of abnormality. The subject of precordial chest leads is dealt with exhaustively with sufficient illustrations to clarify the subject even for the novice. For the study of heart lesions this book should prove a great help. It not only affords opportunity to make comparisons but also aids in arriving at a diagnosis.

Artificial Pneumothorax

Practical Application in the Treatment of Tuberculosis. Contribution by Saranac Lake Physicians to the Studies of the Trudeau Foundation. Editorial Committee: Edward N. Packard, M.D.; John N. Hayes, M.D., and Sidney F. Blanchet, M.D. Foreword by E. R. Baldwin, M.D. Lea & Febiger, Philadelphia. 1940. Price, \$4.

This practical application of artificial pneumothorax is a valuable addition to the armamentarium of every physician who is interested in the treatment of tuberculosis.

♦ ♦

Nursing as a Profession

By Esther Lucille Brown of the Department of Education of the Russell Sage Foundation. 2nd Ed. 1940. Price, 75 cents.

This is another one of the fine contributions issued under the auspices of the Russell Sage Foundation. Nurses and those contemplating entering the nursing profession will find much of interest in this very readable book.

♦ ♦

Manual of Dermatology

By Carroll S. Wright, M.D., Professor of Dermatology and Syphilology, Temple University School of Medicine. The Blakiston Company, Philadelphia. 1940. Price, \$4.

Compact; concise; practical. A large number of up-to-date prescriptions is an important part of the section on treatment. Students will like that section.

THE PATHOLOGY OF INTERNAL DISEASES

By WILLIAM BOYD, M.D., M.R.C.P.,
F.R.C.P. Professor of Pathology and
Bacteriology in the University
of Toronto, Canada

Third edition, thoroughly revised. Octavo,
874 pages, illustrated with 353 engravings
and 4 colored plates. Cloth, \$10.00, net.

Although much new material has been added in the preparation of the third edition of this work, the size of the book has not been increased owing to the deletion of older material and the use of a smaller type for sections of minor importance. This work presented for the first time in a single volume the relations of anatomy, histology and physiology. It describes the causes and nature of internal diseases and traces their progress. It is a safe and conservative guide covering each disease fully and intensively.

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